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NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA
Commodore unveils TWO new machines – and one comes with the best bundle yet

ATARI
A 16-voice music package for only £40?

CONSOLES
Tips and tricks for the Megadrive, Neo-Geo, Gameboy and PC Engine

GAMES
Invasion of the superheroes! Robocop 2 and Spiderman come to a screen near you

As the machine of tomorrow storms its way into the UK, Express invites you to

MEET THE FUTURE

Can your 16-bit computer catch up? ▼

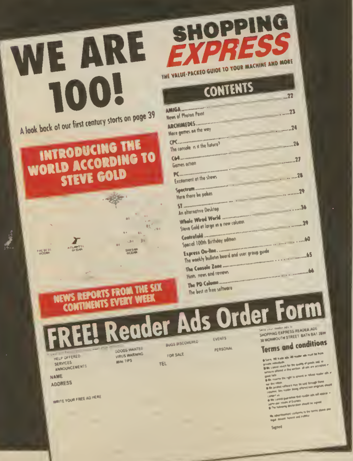
PUSHING THE LIMITS

The Amiga, PC, ST & Arc: What does the future hold? A special report starts on page 77

Commodore
Commodore

SHOW BUSINESS! News and views from the Business '90 Show inside

PLUS
48 PAGES OF BARGAINS



WE ARE 100!

A look back at our first century starts on page 39

SHOPPING EXPRESS

THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE

CONTENTS

AMIGA 22
News of Photon Paint
ARCHIMEDES 23
More games on the way
CPC 24
The console is it the future?
C64 26
Games action
PC 27
Excitement at the shows
Spectrum 28
Here there be pokes
ST 29
An alternative Desktop
Whole Wired World 36
Steve Gold at large in a new column
Centrefold 39
Special 100th Birthday edition
Express On-line 60
The weekly bulletin board and user group guide
The Console Zone 65
Hints news and reviews
The PD Column 66
The best in free software

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ACTION STATIONS

Four top railway simulators on the test tracks

frontend

edited by Colin Campbell

SIR CLIVE CONFIDES

What the devil does Sir Clive Sinclair think he's doing? Why hasn't he been launching whizzy new computers? Where is the ZX81 for the 1990s?

The answers to all these questions can be found in this month's issue of *Personal Computer World* which managed to secure a cup of tea and a chat with Britain's best loved inventor.

Unknown to inventor and reporter, Frontend was hiding under the desk, and stole away with the choicest quotes:

"I think the games field is ripe for innovation. It's not a field I would want to get involved with because it's very patronising. I say I wouldn't but it does fascinate me and there are possibilities that have not been exploited. I'm surprised at that."

"The ZX80 and ZX81 were special because they were a revolution. What happened after that was really evolution."

"I don't regret selling to Alan Sugar. It had become a games thing... and from my point of view that's tiresome. I didn't want to be in that business."

"We, as Sinclair Research, are continuing work on laptops..." Usefully, *Express* has salient details of Sir Clive's new machine. Turn to page six. ▨

Sexually transmitted

Thrill seeking PC owners are being tempted by a new program floating around on various bulletin boards and seedy public domain libraries.

Unambiguously called *Sexgames*, the program's main claim to fame is that it can do seriously horrible things to your machine. We'll leave the game's main points to your imagination – but if you do come across it, don't choose the 'Very Dirty" option.

A hideous virus will be set loose which will re-format your hard disk. You have been warned. ■

● Form creation program *FormTool* has been upgraded to include more complex grid drawing, an encyclopedia of 150 form designs and a WYSIWYG preview screen. *FormTool* has already sold 350,000 copies worldwide. The new FormTool Gold costs £89.16 (inc VAT). Call distributor DDT on 0983 864674.

● An exhibition devoted to multimedia is being planned for next summer. Multimedia '91 is being organised by the same company responsible for the Computer Graphics, Image Processing and Electronic Publishing shows. It will be held at the Olympia 2 Conference and Exhibition Centre in London from June 25 to 27 next year.

● A business software design competition has been set up by Computer Associates. The Business Software Challenge is open to all current higher educational students as well as recent graduates. Prizes of £25,000 will go to software designers who create the best solutions to specific problems. Call 071-831 6262. ▨

Ribbon ruin

Last year 26 million printer ribbons were chucked away – enough to reach from Land's End to John O'Groats and back three times. In the entire Western world 128 million ribbons were discarded.

South coast based Lateral Developments reckons it has found a new way to save those faded articles. Re-Ink is a simple spray can which you point at the top of the ribbon. A can costs £12.95 and can replenish ribbons 30 times. The firm reckons computer users will go for the Re-Ink spray in a big way. Call 0202 731237. ▨

The Brethren are back

Readers may remember an organization called the Exclusive Brethren. This lot believe computers should be cast into the dumper for all eternity because they are "the devil's tool".

The religious group – which prevented 115 children of the faithful from attending high-tech schools in Barnet last year – has struck once more by refusing to send their kids to a City Technology College in Dartford, Kent.

The Brethren are furious because of the increasing importance of Information Technology in schools. The CTCs are kitted out with hundreds of computers and are designed to help bright kids get on with technology. The sect say these schools are the work of Satan (when, in fact, they are the work of former Education Minister Kenneth Baker).

The Brethren interpret the Book of Revelations as a prediction that the Antichrist will use technology and computers to lead the forces of evil.

They say computers are "a scientific imitation which rivals what God has put into living persons making man increasingly independent of God".

A spokesman for Leigh CTC in Dartford said the school attracted many applicants and the educational authorities have already stated that will not be reversing the CTC project or dropping IT. ▨

● Classic 16-bit Electronic Arts favourites are to be re-released at a new budget price of £9.99. The first titles to be made available in the Star Performers series will include flight sim *Interceptor*, *Bards Tale II*, *Powerdrome* and 1920s adventure *Hound of Shadow*. ▨

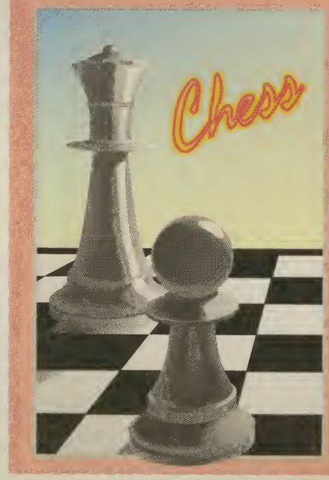
Court in the act

Nicholas Purnell QC chairman of the Criminal Bar Association, has called for computers to be used more often in complicated court cases.

Speaking at the annual Bar Association conference he said the graphical capabilities of computers could help juries understand evidence which is difficult to present. He pointed out that the Bar has long been using graphs and plans on hard copy, but had failed to adopt computer technology.

It emerged that the main reason for the Bar's failure to keep up has been good old fashioned British bureaucracy. Inter-Governmental wrangles are still going on as to who exactly should pay for equipment. ▨

Computer challenges Kasparov



Gary Kasparov is incredibly good at chess. In fact he's so good that he is not only world champion but also one of the only mortals who can whip "the complete chess computer" Deep Thought. However, scientists are working on a new version of the machine which, they claim, will have no problems in giving Kasparov a good drubbing.

Deep Thought II will be ready in 1992 and will be 1,000 times better than its predecessor – it can examine 1,000 million positions per second. Last year Kasparov beat the original; and former world champion Anatoly Karpov held it to a draw.

Dr Andreas Nowatzyk, one of the machine's four designers, commented: "The new version, like the old, plays by sheer brute force. It doesn't think or employ any clever tricks, it just remorselessly examines the maximum number of possible positions in the shortest possible time."

He added: "I wish I could pretend that in building ever faster chess machines we were solving some social problem. But we do it because it's tremendous fun."

Kasparov remains unconvinced. "It may be able to defeat the general run of grandmaster, but not Karpov and me," he said. ▨

MAC CLASSIC DETAILS LEAKED

Details of the forthcoming Macintosh Classic – due to be launched this month – have been leaked to *Express*.

Dealer sources say the entry-level machine will retail at £595 and will feature a single floppy disk and 1Mb of RAM. The Classic has been styled similarly to the soon to be discontinued Mac Plus and SE (pictured) which had hitherto been the entry level Apple machines. A 40Mb hard disk version will cost £940 and may come with 2Mb of RAM.

The Mac Plus currently costs £995 without hard disk. The new Mac represents a 40 per cent price cut.

Apple will also introduce a low-cost colour version of the Classic with a tempting retail tag of £1,230. And a "very sleek" high-end machine, largely comparable to the existing IIci, will also be introduced.

These machines represent Apple's first assault on the European home computer markets. The firm is hoping to attract potential buyers away from established home computers such as IBM compatibles, the Commodore Amiga and Atari's ST. Apple is not prepared to comment on the new launch. All will be revealed in *Express* 102. ▩

Scouting around

Cubs, Scouts, Guides and other healthy outdoor types should spend more time with computers, according to the Government.

Ministers complain that they are pouring some £2 million a year into such youth organisations and they want to impose a strict curriculum on them to make sure that their investment pays dividends.

But Scouts are already encouraged to use computers – there's even proficiency badge for computer literacy. ▩

Gruesome exploding heads

It's always the same when dead people crawl out of their so-called eternal resting places. Unpleasant things start to happen. Heads get crunched, blood squirts, people get intimate with chainsaws, meat cleavers, spikes, and eventually their own insides. It's a nasty scene.

So it is with *Horror Zombies from the Crypt*, the latest game to come from the Millennium stable. In this sordid arcade adventure you not only have to contend with the undead, but also a whole host of ghouls, spectres, werebeasts, vampires and other unmentionables.

Millennium says it's all very squealsome. One insider confided to Frontend: "When the horror zombies get you, your head explodes and a great fountain of blood pours out." Those of you who appreciate a good decapitation need only wait until November when *Horror Zombies* will be launched on the ST, Amiga and PC. ▩

CONTENTS

FEATURES

All aboard the Express train
We blow the whistle on train simulations – page 69

Has your machine reached its limits?
Is there more power to be wrung out of your hardware? – page 77

This computer *is* better than your computer
We've seen the future and it works – page 86

100th BIRTHDAY

The first 100 issues
A Centrefold special looks at the whackiest items we've ever covered – page 39

£20,000 to be won
And we've got 21,000 readers. Fancy your chances? – page 84

REVIEWS

Thanks for the memory
How easy is it to add megabytes to an Amiga? – page 16

EVERY WEEK

Games Week 18
News, tips and reviews

News 4-9
Opinion 10
Letters 13
Circuit City 73
Power problems
Tech Tips 74

SHOPPING EXPRESS

Columns:

Amiga 22
Archimedes 23
CPC 24
C64 25
PC 26
Spectrum 27
ST 28
Whole Wired World 36
Express Jobs 38
Centrefold 39
Classified 43
On-line 60
Console Zone 65
PD Column 66

Express went back to Earls Court for the seond

THE ENTERPRI

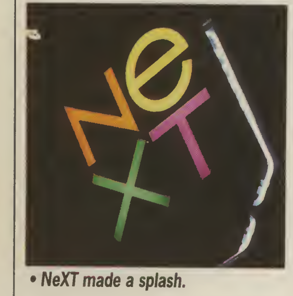
Surprisingly enough computer shows dedicated to business have a reputation for being just a little dull. Some philistines have even suggested that these events are even more boring than your average bus-spotters' convention in Weston-super-Mare.

Business Computing '90 at Earls Court set itself up to catalyse a positive reaction and actually managed to succeed. Unlike that monster the Which Computer? Show it wasn't big enough to warrant a delegation at the United Nations. Nor was it a parade of techie boards and gadgetry, backed up with the usual babble of jargon addicts. It even managed to steer clear of outrageous commercialism (despite being all about making more money by using better computers).

IBM was there, Apple was there, Microsoft was there, Commodore was there, Amstrad was there. Atari wasn't.

It was a great opportunity for anyone serious about serious computing to get acquainted with anything from the best in low- cost word processing to 486 token ring networks.

NEXT: Comprehensive details of the entry-level NeXT machine can be found on page seven. But how was the mould-breaking computer received by computing's cognoscente? Most people could barely disguise their amazement. This is, after all, one hell of a machine. What it can't do isn't worth bothering with.



• NeXT made a splash.

At £3,300 the low-cost NeXT is a snip. Trouble is, none of us have £3,300 to spare.

None of us are going to re-mortgage the house. But there were quite a few serious young men in evidence last week – most of whom seemed to be figuring out whether to forego the Jag for a Montego.

Those of you impressed by big numbers will enjoy this: it comes with a 105Mb hard disk, a 2.88Mb floppy drive and has 8Mb of memory on board. The 68040 chip runs at 15 million instructions per second (MIPS) and 2.8 million floating operations per second (that's about three times faster than the 68030). Just beautiful.

COMMODORE: This firm has attempted more assaults on the serious end of the market than is advisable. Nevertheless, Commodore has weathered past criticism, carved itself a respectable little market share and is now beginning to launch some noteworthy kit.

Take its first ever portable. The C286-LT took everybody by surprise. Most had expected to see little more than a re-jigged PC Starter Pack and maybe another uninspiring desktop 286. But the 286 portable really is a great little machine.

It's A4 sized, weighs 7lbs (3.2kg) and is just two inches deep. There's a 20Mb hard disk included as well as the 1.44Mb standard 3.5-inch floppy. The LCD screen is clear and bright and there's all the expected peripherals including printer, and serial and parallel ports. At £1,999 it's not the cheapest option, but it's a good deal more portable than other 286 PCs which cost about £200 less.

• Commodore's C286-LT: the nicest portable under £2,000.

UK boss Steve Franklin was, as always, bullish. "It is stylish, small and light enough to carry anywhere," he said. Franklin is never one to shy away from bold predictions and he's already reckoning on stealing more market share from the old predictables.

Commodore also unveiled the Amiga 3500 which is basically the Multimedia 3000 machine in a tower box. This is definitely for high-end graphics, animation, video and CAD fans.

The firm has also fulfilled its promise to get into Unix. Unix version 4 has been chosen as the operating system across all high-end Amigas – from the A2000 up.

Oh yes, and there was a largely uninspiring addition to the desktop range. Called the PC-35 it is essentially just another 286 with a hard disk.

• The new Amiga 3500 running X-Windows under Unix. Bye Bye 'home micro'.

AMSTRAD: Sugar and his band cocked a snoot at all of us who have been saying the firm's serious desktop PCs are a bit of a joke. The 'New Generation' 3000 series has already been documented in *Express* (Issue 97). They are good, tough, fast machines for people looking to make that old price/performance equation add up.

Rumour has it that the firm is planning to launch a low-cost notebook PC next year. There were no clues at the show but don't bet against an appearance, either at Which? in the spring or this time next year.

As far as serious computing is concerned, Amstrad has definitely arrived.

IBM: It was official launch time for the low-cost PS/1 machine. The slogan is 'five minutes and you're in business' and it's not difficult to see just who Big Blue has in mind for its entry-level PC.

Advertising will feature small business clichés so beloved of the DTI, one of which is a one-man car repair operation, with the hero sorting out business headaches on his trusty IBM.

First reactions aren't all that encouraging. Many feel the firm will have to rely on its not inconsiderable advertising budget and 'brand awareness' advantage to shift the machine.

As an entry-level machine it looks the part, but there's a plastic feel about the kit which has not impressed reviewers and the technical specifications are hardly awe-inspiring.

For those of us in the know there are far better options but, being IBM, this machine will probably sell. Judging by the effort expended at the show (by a company which has often attempted to appear aloof) this machine has been designed to succeed.

And when IBM wants something bad, it usually gets it.

STAR MICRONICS: Three new printers were unveiled for the first time, and prospective printer buyers should cast their eyes over the new options. The LC-200 is a nine-pin model supplied with both mono and colour ribbons, plus a 16Mb buffer. It has eight 'near letter quality' fonts and a top-speed of 225 characters per second.

The LC24-200 is the same again, except with 24 pins and no colour. Top speed is 222 cps. The LC24-200 Colour is self-explanatory but it has a 30K buffer. Prices are an impressive £259, £319 and £369 respectively.

Star's sales and marketing director Roger Bayley said: "We've broken new ground with these products. Our instinct to provide more standard features on low cost machines is absolutely correct."

He's absolutely correct.

• IBM's PS/1 was there, but will it still be around next year?

second time in a week for Business Solutions '90

RISE INITIATIVE

ELONEX: It introduced a desktop 386 costing £925. The PC-386SXM/16 comes with 1Mb of RAM, a 40Mb fixed disk, mono monitor and all the usual extras. The colour version costs a customer-winning £1,095. There was also a 486 costing £2,500 and a £1,295, 286 notebook PC. Interested buyers should call 081-452 4444.

ARCHE: A manufacturer of very good corporate machines but still not immune to the delightful burdens of market pressure. Arc lopped big numbers off its prices – £2,275 came off the Profile 486-25 which now costs just £9,245. At the more sensible end of the price range, the firm cut £275 off its 1Mb Parade 286 (but that's still £1,745).

The first Arche portable also made an appearance.This is a hefty 386 running at 20MHz with 2Mb of RAM, 40Mb hard disk and one floppy.

MICROSOFT: With everyone and his, or her, secretary converting to PC graphical environments it was hardly surprising to see Microsoft holding court to a whole host of Windows software publishers.

Visitors had a chance to see all manner of applications running under Windows including *Word, Excel, PowerPoint* and *Project.* Familiar names such as Samna, Precision, Hewlett Packard and IBM were set up in the Windows village as well as the newly formed Windows User Group, who are worth talking to. There are now about 150 Windows 3.0 compatible programs available. One of the newest was NBI's advanced word processing package *Legacy*. It's got tons of whizzy features and costs £450.

THE star COMPUTER PRINTERS
ELONEX
star
OMNIS

• Big stands were the order of the day from the major players in Earls Court.

APPLE: The home and small business Macintosh Classic will be officially launched next week so, unfortunately, Apple decided not to preview its long awaited machine at the show. Thought I'd better mention it though, because there was nothing else new for Mac fans, except for a few applications and add-ons scattered around the show.

PANASONIC: Like Star, Panasonic was in the mood for low cost printers. The KX-P1123 is a 24-pin 10 or 12-cpi dot matrix with a retail tag of £295.

At the other end of the scale was the KX-P4455 laser which has two bins and can manage 11 pages per minute. It comes with 2Mb of RAM and has an attractive number of interfaces. Price? £2,695.

Two new portable PCs were unveiled. The 'just a little bit bigger than A4' CF-170 and CF-270 come with 20Mb hard disk, floppy drive and incredibly sharp VGA or CGA screens. They weigh 6lbs (2.8 Kg) and 7lbs (3.1 Kg) respectively and come in clamshell cases. Nice machines.

SAMNA: Best known for the Ami word processing range, Samna announced the imminent availability of a *HyperCard*-like tool for the PC. *SmarText* is a simple way of storing and linking text or graphical information in an easily accessible database. It costs £500.

WALTERS: A low cost 286 was launched by this business computing veteran. The GC 80286 AT is a basic single floppy without any frills and costs £530.

This is not especially cheap given the lack of extras but, interestingly, it represents a massive 42 per cent drop on Walters previous pricing for an entry level 286. Ron Brand, chief executive of parent company Willaire, explained that a "tightening up" of corporate IT spending demanded the availability of workhorse 286 options.

• Some of Amstrad's technical advisors explaining the advantages of OS/2.

SAMSUNG: "Computers", says Samsung national sales manager Peter Cleverly, "are not particularly interesting things. In fact they're extremely boring." Well, there's nothing like an over-enthusiastic sales pitch to get the adrenalin flowing. In fact Cleverly was trying to say that it's what you do with the machine that counts. Hence Samsung invited lots of software developers to show what they could do. Among them was the *Fish Auction System* from Donegal based Profile Systems, which is quite interesting.

Samsung also dived into the low-cost fax market with a £395 offering called the SF1000.

TANDON: Tandon is Britain's second largest supplier of 286 machines yet, surprisingly, the only new hardware in evidence last week was a trio of dot-matrix printers. The cheapest – the MatrixPrinter 9L – is nine-wire and bi-directional, offering draft printing speeds of 220 characters per second. It has a colour option and costs £595.

OPUS: A first-timer user's network package was unveiled which requires no more than a couple of wires stuck into the back of your PC. There are three versions, the cheapest of which can be linked to four users. The top end version can handle up to 100 users.

Also on show for the first time was the 286 desktop portable, which you already know about. Although it's not a laptop, it's small enough to be carried around.

OLIVETTI: A veritable monster of a stand held the new 386SX which will retail at a reasonable £1,499. There was also a starter pack for the "Euro-business executive". The PCS1992 (geddit?) bundle features a choice of 8086, 286 or 386 computers along with Microsoft *Works*, a database of European companies, a translator and country-specific word templates. Prices are yet to be announced.

Reported by Colin Campbell.

NEW PRODUCT
GENERATION
AMSTRAD

• Amstrad took the prize for the most over the top stand with this multi-layer contraption, complete with its own bar for the fortunate few who were invited in.

PETER PARKER PICKED A PLATFORM POKER

• *Spiderman is back at the end of the month in a new game from Entertainment International. Called* The Amazing Spiderman, *the game sees Peter Parker aka Spiderman attempting to rescue his wife Mary Jane. She has been spouse-napped by the evil Mysterio. The game is set in the Rockwell Studios with each level being set on a separate sound stage. Scenes include horror, science fiction, outer space, epic and backstage. No prices as yet.*

Breathtaking performance CD sound and st nnin

NEW COLOUR THE WAY FOR

A low-cost version of the state-of-the-art NeXT machine was launched in London last week, and was duly received with something approaching rapture by a European audience of developers, distributors and the press.

The Californian company, founded by former Apple boss Steve Jobs, launched four new products ranging from the £3,225 NeXTstation to the top-end 32-bit PostScript colour NeXTdimension.

The range is being pitched as a future-proof platform for the '90s based on the innovative graphical user interface, NeXTstep, running on a fully multi-tasking Unix operating system. The machines' raw power and speed should ensure major penetration of networking, DTP and multimedia markets, although as yet it remains to be seen whether the company has the marketing muscle to realise this potential.

The 68030 NeXTcube machine launched earlier this year has been ditched in favour of the 68040-based series – NeXT claims to have secured half of Motorola's total 68040 output.

In separate announcements a number of developers introduced software applications and peripherals for the machine. Notably such heavyweights as Lotus, Quark, Ashton-Tate, Adobe and WordPerfect.

With the increased power and projected base of 100 applications within the next year, NeXT has answered earlier criticisms levelled at its exciting machine. Perhaps the most far-reaching decision being to pitch the entry level machine at £3,225 – half of the original asking price and nearly a third of that of competing workstations from the likes of Sun.

The range of innovations would appear to be almost endless.

- The machine includes a 2.88Mb floppy disk drive and 105Mb hard disk with NeXTstep Release 2.0 installed and 8Mb of memory. Options include memory expansion to 32Mb and a 340Mb hard disk. Also available are 250Mb rewritable optical disk, a 1.4 gigabyte hard disk and a low-cost 400dpi laser printer.
- The high performance Motorola 68040 chip pushes the machine to speeds doubling those of a 486 PC or top-end Macintosh and in intensive graphics applications can perform tasks 60 per cent faster than a dedicated graphics workstation.
- The NeXT display utilises a million pixels (1,120 x 832 resolution) at 92dpi and is based on Sony Trinitron technology which ensures crisp clear images not rivaled by any computers in the sub-£10,000 price bracket. Its screen-drivers can handle different graphics resolutions in different windows – simultaneously.

Very nice firm

IBM has shown its corporate heart by giving away over $400,000 worth of computer equipment, including 12 PCs, to a Romanian hospital.

Eugene Hahn, head of Big Blue's Eastern arm, IBM Roece Inc, came over misty eyed and said: "IBM has always prided itself on being a good corporate citizen and has a history of being charitable to the handicapped and sick."

Rhyme or reason

T S Eliot would have swung his cats for it. Dylan Thomas would have given up the booze. What is it? It's *WordPerfect Rhymer*, a program which finds rhymes for up to 93,000 words.

The system will run on any machine capable of running *WordPerfect*. It is capable of finding end-word, syllable and even triple rhymes (such as antelope and cantelope). It does this by working phonetically.

It costs £75 and is available now. For more information call 0932 850500.

FBI indicts dealer for selling secrets from old disk drive

American computer salvage expert Charles Hayes, who bought a second-hand Harris-Lanier system for $45 only to find that it contained State Department records (see *Express* 97), has been busted for attempting to sell the sensitive data from the system.

The Federal Bureau of Investigations spent nine hours searching the premises of Hayes' business, Challenger Ltd, following which a suit was filed against him by the Justice Department.

This was a month ago; since then Hayes has become further embroiled with a worried US bureaucracy. He maintains that between laying out the money and receiving the system, the data was supposed to have been erased. A Harris-Lanier operative denies this. The data included sealed indictments, details about protected informants, and other highly sensitive information.

The authorities now claim that they have taped conversations in which Hayes attempts to sell the data. A private investigator wearing a body-wire approached the dealer on two occasions in attempts to gain evidence.

Hayes claims that he realised that he was talking to a Government agent and was only joking about the data.

The authorities maintain that "Hayes was making a serious attempt to market information." and that "There was no kidding or joking about it." The case continues.

Viruses could be costing £5 billion a year

Computer viruses could be costing business up to £5 billion a year according to a report published last week.

The *Norton Antivirus* Survey found that reported incidences of virus infections in worldwide business establishments had risen from 3,000 in 1988 to 30,000 already this year.

The survey, on behalf of the European Software Publishing Group (which publishes virus busting packages) estimated that the cost of removing rogue software programs could be as high as £750 million this year.

But the damage to businesses done by the viruses is much more extreme.

PC companies battle it out

Olivetti and Amstrad have been throwing poll results at each other in an attempt to win a PC skirmish.

The Italian firm claims that a recent Romtec report shows that its PCS286 was on top of the market with both Amstrad and Compaq machines lagging behind.

Amstrad is supposed to be five percentage points behind. Olivetti also claims that its PC386SX replete with the '1992' package of Microsoft *Works* 2, will romp home over Amstrad's new PC3000 range.

Amstrad's counter-claim is based on results taken from a MORI poll.

These figures apparently show that Amstrad is second in the market, beaten only by IBM.

Meanwhile Olivetti is looking at extending the 3,500 redundancies it has already made this year.

With both firms taking recourse in statistics, this one could run and run.

stunning 32-bit colour sets Steve Jobs' 'budget' NeXT apart

R NeXT SHOWS R 90s COMPUTING

• *NeXTstation: superb colour at a ground-breaking price.*

This includes full motion video which can be moved around, captured, and pasted into documents in real-time.

- Built in CD quality sound gives the machine some novel networking capabilities. Users can append spreadsheets, databases and documents with voice buttons which allow audio annotation of items of interest or note.
- By using Display PostScript, a screen version of the page description language pioneered by Adobe and normally found at the heart of high resolution laser printers, NeXT has finally fulfilled the 'What You See Is What You Get' promise. What you see onscreen is exactly what you will see from the print-out.
- Bundled NeXT software also offers optical character recognition capabilities which allow incoming fax messages to be read as text and edited accordingly. Computers currently treat fax messages as solid images which cannot be tampered with.

The other three machines on offer were a 16-bit colour version of NeXTstation, an upgraded version of the original NeXTcube which features a 68040 with floppy drive and 105Mb hard disk, and a 32-bit colour and graphics board.

The NeXTcube can be used as a network server or high-end desktop and offers the greatest number of configuration options within the NeXT family.

The NeXTdimension card offers 32-bit colour (16-bit normal colour and 8-bit for transparencies) which allows for sophisticated three-dimensional art work from a display of 16 million colours. It features the RISC i860 chip which is used for handling heavy duty on-screen graphics, and the C-Cube video compression chip which can condense video or bitmapped images by a factor of thirty to one. The NeXTdimension board costs £2,570 while the colour NeXTstation and NeXTcube cost £5,155.

Steve Jobs commented: "We've listened carefully to our current and prospective customers and many have told us that our new products have exceeded their expectations. They have applauded our decision not to quote artificially low prices for diskless or incomplete products. NeXT's low prices are for real, complete, high performance computers". ▩

Sims city!

More simulations and strategies than you could shake a Fokker Wolf at are coming your way from Mindscape.

The Sussex based company has signed American sim specialist Three Sixty and will be marketing the following titles in the UK:

Das Boot is based on the cult 1981 film of the same name about a WWII German U-Boat. It features depths charges, land-based targets, and missions in the North Atlantic, the Bay of Biscay and Norway among others.

Blue Max, a WWI flying sim in which you have a choice of eight fighter planes in order to test your flying skills.

MegaFortress sees you flying a B-52 bomber. You have "state of the art" weaponry, and must avert a nuclear confrontation. All this with 3D graphics.

All cost £34.99 and run PC and compatibles. ▩

Fuji gets OK

The British Government has finally given the thumbs up to the merger of ICL with the Japanese mega-corporation Fujitsu.

This move will take the last remaining British computer firm out of European control. It will also make Fujitsu the second largest computer and electronics company in the world, just one step away from IBM.

Fujitsu has not bought ICL wholesale, it has taken an 80 per cent share giving it full voting control. ▩

They've got your number

Every household address in the UK is for sale. What's more once you've bought the software, called *QuickAddress*, you can run it on any standard PC with a hard disk.

***QuickAddress* is a Terminate and Stay Resident (TSR) program and acts as a pop-up window on your PC. All you need do is call it up, enter the postcode, and the address will appear within four seconds, at least that's what the publisher claims. It also claims that it has been tested with all leading databases, word processors and spreadsheets.**

The system makes use of the Post Office Address File (PAF) which contains 23 million addresses. The original data file has been crunched from 2,000Mb to a more handleable six.

***QuickAddress* costs £875, comes with twice yearly updates and is available now.**

Call 071-228 6730 for more information.

Mousetrap catches computing power

The world's first pocket-sized supercomputer was unveiled last week at a military computing exhibition in Wembley. Christened the Mousetrap, it weighs less than than a couple of bags of sugar, yet it has twice the power of an IBM mainframe.

Essentially the Mousetrap is a parallel-processing SuperNode, compressed down into a portable tool of a fraction the size. The SuperNode, the fruit of a joint Franco-British venture, is designed for computer-intensive tasks such as finite element analysis and computational dynamics, and it runs on its own operating system, a Unix offshoot known as IDRIS.

Once the project was completed, the possibility of miniaturising the Transputer chips and fastening them straight on to a ceramic substrate, instead of in the usual space-consuming multi-legged packages of the Supernodes *et al*, became evident to the military. The Royal Signals and Radar Establishment thus developed a hand-held version for field operations.

It's disconcertingly small size belies its power. The 16 transputers, each with 256K of static RAM, provide a peak processing power of 200 million MIPS (million instructions per second. Yet it can be brought into life and powered by a battery pack the size of a paperback book. The RSRE application is designed to calculate lines of sight on a map, to determine what can and cannot be seen by the enemy. This takes it a couple of seconds. On a DEC VAX mini this would take 10 to 15 minutes.

No civilian version yet exists. Watch this space for more! ▩

• *Mousetrap: small but extremely powerful.*

How simple are you?

Do simple minds pick simple tools? Is 'user-friendly' a euphemism for 'too dim to cope with anything more complex than a wheelbarrow?' To get to the point, does all this apply to the average word processor user's prose style?

Researchers at the University of Delaware claim to have established a relationship between the sophistication of constructed sentences and the complexity of word processor used.

Thus, predictably, Macintosh user's ability corresponds to the level of a 14-year old while, naturally, an IBM user is accorded the intellectual capacity of 18 years. The blame is placed on the Macintosh's user interface which, through its suffocating simplicity, encourages poor writing, spelling and punctuation.

The possibility that people choose simple word processors because they want to concentrate on what it is they are writing does not, however, enter into this analysis. ▩

NIBBLES

- A cheaper way of printing images straight from video has been launched by Thurly-Lander.
  The (relatively) low cost TP2560 video printer provides a 256 grey tone hard copy from a video image. It operates from standard video signal inputs and can be controlled by a remote keypad with LCD display. It costs £1,261.
- Apple has transferred full responsibility of its HyperCard software range to its subsidiary Claris. The firm realises that the popular line-up of interactive cataloguing programs needs total support from its software arm. Meanwhile, UK software firm Kuma is planning to launch a low-cost *HyperCard* type programs for the ST and Amiga.
- Violence and speed are the general themes for Players' latest 8-bit budget games. *Operation Hanoi, Havoc, Turbo Cup Challenge* and *Outlaw* are just a few of the latest £2.99 titles.
- A 30-minute video aimed at first time buyers of the Amiga has been launched by Trilogic. It helps users get to grips with the machine and costs £14.99. Call 0274 691115.
- We got the telephone number of Harlequin, maker of the Sound Express sound sampler, wrong in *Express* 99. The firm can be found on 0268 695355.
- British Telecom is launch a way for users to check telephone bills. For a charge of 5p users can check the cost of a call. Should be useful for modem owners.
- An estimated 30,000 people attended the two day Computer Entertainment Show a few weeks back. Some 7,000 hopeful visitors were turned way for safety reasons. Organiser EMAP is understood to be looking for an alternative venue for next year's event.
- A new directory of PC software and hardware is to be published in disk form. Called *Inside Information*, it can be used as a sort of database, searching for products by name, supplier or type. The program contains some 5,000 products already and is updated monthly. It costs £75 an issue or £150 for a year's updates from Codehigh on 0256 893539.

Trevor scores for computer footer

Trevor Brooking scored the winning goal in an FA Cup final. He played for an England side which did not lose one match in the 1982 World Cup Campaign. He was Britain's first £1 million player. When analysing footer on the telly he knows exactly, to the second, when it's time to switch away from the sweeper system to a more convention style...

This man knows his football.

Hardly surprising then that the former West Ham midfield great has joined the ever-growing band of footballers to be associated with computer games.

***Trevor Brooking's World Cup Glory* from Challenge is a strategy based game woven around a World Cup campaign. In the game TB pops up at half time and full time to give match analysis and tips.**

Challenge reckons this is "the most detailed World Cup game ever". It costs £9.99 on the Speccy, C64 and CPC. Call 0371 875250. ▩

• Brooking in his Hammers heyday (vs Manchester United).

Rubber keyed PC compatible set for '91

SIR CLIVE'S PC LAPTOP PLANS

Sir Clive Sinclair has revealed the details of his long awaited PC compatible laptop.

Curiously, the laptop could be launched as a Sinclair Research product – the existing laptop Z88 with its proprietary operating system is a Cambridge Computer machine. Both companies are largely owned by Sir Clive.

The new A4-sized machine is just an inch thick. Unlike the Z88 it is clamshell styled with the screen lifted up over a rubber keyboard. The screen is slightly bigger than that sported by the Z88.

It has been dubbed the Sterling and is claimed to be 100 per cent IBM compatible. It does not come with a floppy drive although one will be offered as an optional extra.

It is likely that the ROM will feature built-in word processing, database, spreadsheet and comms software. It weighs two pounds and will cost between £500 and £600. Sinclair Research is working on a hard disk, although this may not be included in the launch versions of the Sterling.

In an interview with *Personal Computer World* magazine Sir Clive commented: "It has a lot of hardware innovation – I mean a lot of the features the Z88 pioneered. You can switch it off and come back and everything is still alive in there. It's got low power consumption, it can go to sleep without losing its data.

"The thing about this is that it's totally [PC] compatible. It will run any software, there's no hedging or fudging."

The Sterling comes with 1Mb of RAM although Sinclair is contemplating a cheaper 500K version "for people who have limited use". This would be particularly attractive to buyers simply looking for a word processing tool.

Already the machine is being previewed to trade customers, who are being invited to offer criticisms and constructive advice. Sinclair is hoping to get the machine into the shops by the middle of next year. ▩

• Hear more from Sir Clive on page 2.

Grandmaster very flash

How would you like to prove yourself against a chess Grand Master? How would you like to do it from the comfort of your own armchair? Well, with the help of the BBC and some advanced computer technology the chance could be yours.

The Beeb has arranged for Jon Speelman, one of the finest chess players ever to emerge from this country, to play the television watching population of Great Britain – at the same time.

Viewers to a program called *Your Move*, to be screened on December 7th, will be able to phone in their moves in a live attempt to defeat the great man. The BBC has enlisted the aid of a computer which can analyse thousands of calls a minute in order to reach the best possible move in the shortest possible time.

Although multiple matches – called Simuls – are commonplace, it is unheard of for anyone to play an entire nation in one sitting. *Your Move* is being heralded as the first true piece of interactive television to be shown in this country. No time slots have been arranged as yet. ▩

USSR grabs old US mainframes

Another nail in the coffin of the cold war has just been struck – the US is to sell second-hand IBM mainframes to the Soviet Union.

A year ago it would have been illegal to attempt to export so much as a 286 behind the iron curtain. Now the influence of Glasnost is evident in the announcement of Boston-based American Supercomputers Unlimited of its first hi-tech sale to the Russians. President Wayne Cowert, who formed the company in July immediately after the lifting of the ban on advanced technology exports to Eastern Europe, believes demand for these computers is practically insatiable.

The company has already opened a Moscow office. ▩

Computers sold to Iraq through back door

Iraq may have been receiving American computer equipment despite strict trade embargos.

Saddam Hussein's regime is still able to obtain high-tech equipment including supercomputers via a loophole in the USA's own back yard.

America offers Brazil 'very favourable trading status', and Brazil has few qualms about arms and technology exports to Iraq. Questions have already been asked in the US Senate with one Senator, Bob Kasten, demanding that the trade between the States and Brazil be reviewed because the Brazilians "turn around and transfer it to madmen like Hussein."

IBM has already had an export licence refused when it attempted to sell a powerful number crunching device called a vector processor to the University of Sao Paulo.

Until 1988 the South American country was still selling arms to Libya. It has also sold missiles to Iraq. In the last few months several Brazilian advisors were recently reported to be aiding Iraq with missile development – in Baghdad.

The call for a cessation of US/Brazil trade has not met full support in America where powerful Senate lobbyists are fighting both corners.

It is also known that Brazil is not the only country which imports from the States only to export to Iraq. ▩

• Saddam Hussein: could be receiving the best in US computer technology.

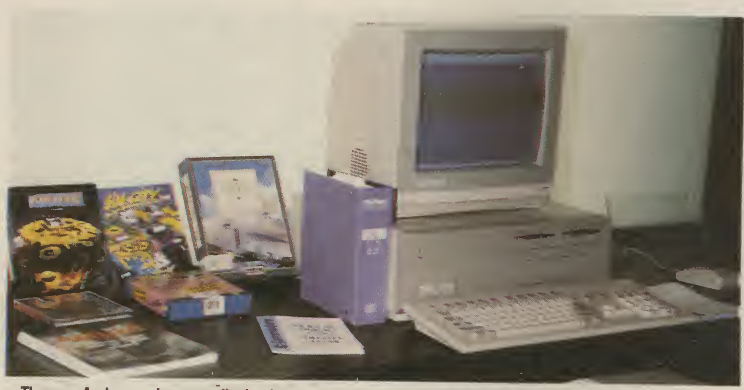
EXCLUSIVE: New Amiga aimed at the adult audience

AMIGA 1500 PHC GOES UP MARKET

Commodore is planning to launch a new Amiga, the 1500 PHC, aimed squarely at those users who are really serious about computing.

The PHC (Personal Home Computer) pack will feature an Amiga 1500 – which is a 1Mb machine with two disk drives in a 2000 case – along with a line-up of highly acclaimed software packages and extras.

For just under £1,000 buyers will receive the machine and MSS's integrated business pack *Amiga Works* which comes with a word processor, database, spreadsheet, sideways printing tool and comms capabilities.



• *The new Amiga package on display last week at the Business Soloutions '90 show.*

There will also be a number of high quality games including world conquering strategy classic *Populous* and 'build you own metropolis game *Sim City*. Both will come with their own expansion disks which are designed to take advantage of the extra 500K of memory. The controversial Battle of Britain game *Their Finest Hour* will also be included. Art package *Deluxe Paint 3* has been thrown in as well, instead of the version 2 included in the A500 bundles.

Get the Most out of Your Amiga, a new book from *Express*'s sister paper *Amiga Format* will also be included. The 172-page book normally retails at £9.95 and is described as "the complete accessory for your Amiga including everything from product guides to handy tips".

The new machine does not include any new technology, but is configured to be useful to someone who wants to use the Amiga's multi-tasking system to run productivity packages as well as playing the more sophisticated type of game.

Commodore says this is the first package to really cater for those people who enjoy stimulating games and need a computer for everyday use.

It sees it as a direct competitor to PC based systems like IBM's PS/1, and aims to prove that MS-DOS compatibility is not essential for the home/business user. ▪

Arc adds up

Archimedes specialist Clares has launched a windows based spreadsheet for the Acorn machine.

Called *Schema*, the package was developed in conjunction with Acorn and fully complies with the user-friendly RISCOS operating system. Users can draw in material from word processors, graphics and other spreadsheets.

"*Schema* is the first package for the Archimedes range where Acorn has been closely involved with the developer and publisher right from the word go," said the company's eponymous boss Dave Clare."

It costs £130. Call 0606 48511 for more details. ▪

Slim Dynabook slips in

Dynabook's featherweight portable PC was launched last week. The 286 machine weighs just eight pounds but includes a 20 or 40Mb hard disk as standard.

It comes with an 11-inch diagonal detachable black-on-white VGA screen, the whole thing measuring 1.7 inches x 13.6 inches x 11 inches.

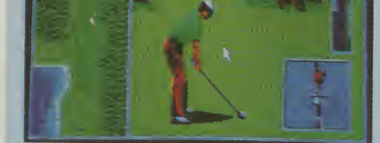
Dynabook has thrown in one year's fully comprehensive insurance for the machine (valid anywhere in the world) and one year's on-site maintenance in the UK. Security software is also included which will keep info safe from prying eyes.

• *Dynabook 286: "superbly designed and engineered" but it costs.*

The 1Mb of RAM on the motherboard can be upgraded by two, three or four times. An ingenious 'docking' device allows desktop peripherals to be attached easily.

Dynabook is clearly pitching its sleek PC at the top end executive market, and initial reactions have been more enthusiastic than for most new laptops. It zips along at 16MHz and costs a heavyweight £3,295. Call 0628 473363. ▪

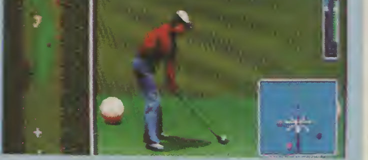
Console game makes it to the Amiga



• *The Sega version, or is it the Amiga?*

Sega Megadrive owners are already familiar with the excellent graphics and gameplay offered by *Tournament Golf*. Home computer owners are soon to be offered more of the same.

Publisher Elite says it is putting the finishing touches to the ST, Amiga, C64 and PC versions of the game. And the firm reckons owners of those machines won't be short-changed. We've got a screen shot from the Megadrive original and from the Amiga version. It's looking good isn't it? ▪



• *Or is this the Amiga? Ah well, never mind...*

Love is... £1M of PCs

A lovestruck corporate computer buyer placed nearly £1 million worth of orders with dealer XL Datacomp – because he had fallen for the company's pretty sales executive.

Mansel Kersey admitted to Cardiff Crown Court that he had placed orders for mini computers worth £911,000 with Sarah Hoesli. She had been due to pick up commission of £35,000 as a result of the deals, until Kersey's bosses realised he was placing outrageous orders without approval.

A spokeswoman for AB Electronics said: "He became quite infatuated with her. In the end we lost a little money but we weren't left with the computers."

Hoesli's boss said she had taken the orders in good faith and done nothing wrong. Kersey, who had repeatedly sent Hoesli flowers and gifts, admitted forgery and attempted theft. ▪

• *Out of the Zoo and into the Garden: the programmers and friend.*

Grow a game

Gardening and computing. They don't exactly sit comfortably together do they? But games publisher Electronic Zoo reckons on changing all that.

The firm is planning to publish a new program called *Magic Garden*. It's your job to turn the patch of greenery into a beautiful place with flower beds, a vegetable patch, a sumptuously laden greenhouse and a popular bird table. Really lovely.

Just to make the whole exercise just a little bit more exciting the Zoo has included a disgusting little band of gnomes who are bent on destruction of nice things. Stop these little blighters and your computer yard will look even better than the Blue Peter Garden. ▪

Club AMOS born

The AMOS Club, for users of the Amiga games creator software, has put out its first newsletter.

You can join up and get the 20-page fact sheet by writing to The AMOS Club, 1 Lower Moor, Whiddon Valley, Barnstaple, Devon EX32 8NW. It costs £10. ▪

THE WEEK IN VIEW

...or should that be the last 100 weeks? As Express celebrates its biggest ever issue, Andy Storer casts an eye back over the first two years...

We were having a trawl through our first 100 issues this week and conducting a straw poll on the best stories we'd covered. For once, none of us knew where to begin. Processing computing news, week in, week out, is fascinating and compulsive employment almost bordering on the addictive. And with any kind of addiction, things tend to become a little blurred. 486, A3000, ARM3, TT, STE, Neo-Geo, Ncube, X-MP, CPC+, CD ROM, CD-I, DV-I, CDTV. See what I mean? We're almost in downtown TLA here. TLA? Three Letter Acronym matey.

Although you might end up too near to the wood to see the trees you still come across the same old chestnuts. Like the ST console story we ran a couple of weeks ago. That was the cover story on our first high street issue back in November '88. It might yet be our cover in November 91. After all, we announced the Amstrad console a whole year before Alan Sugar did. But amidst all the blurr of technological change some advancements still stand out.

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• *Plus ça change... Expresses 0 and 98.*

I've noticed it in the way that words like 'multimedia', 'interactive' and 'real time' used to be met with derision as pretentious twaddle whereas they're now passé. Now it's 'virtual', 'cyber' and 'nanotech'. You can just see it - 'IBM announces nanotech computer', 'Autodesk launches *CyberCAD*', 'Atari's secret virtual console'. But we'll leave them for the next 100 *Express*'s.

In the meantime, we'll leave you with the launch we all agree is the most exciting this decade - the NeXT machine. *Express* will be receiving one around Christmas time for a full hands-on. And we believe it to be so fabulously sexy that we're going to invite you the reader to come and have a play with it. After all, why should we get all the fun? ■

Express Access

Hey! Get in touch with us! *Express* is always on the look out for news leads and tip-offs – and we'll pay you for passing them on too!

Also, if you have any burning ideas for features or surveys then drop us a line – remember, we cover every aspect of computing.

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Write and tell HFW what you think about anything under the Sun! Reach him at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE, as we're too busy writing the magazine.

■ Amiga muso

In the Amiga column a while back you mentioned an American company called Hologramophone Research, of Miami Florida. Where do they get these corporate-overkill names from? Perhaps they operate from somebody's garage and want to appear like a mega-conglomerate.

Anyway, I'd like to check out their program called *Hyperchord,* so could you furnish me with their name and address?

Ian Robson, High Wycombe, Bucks

No sooner said than done Ian. The trendily-named software heroes that you want to track down can be found at 638 Summit Avenue, St Paul, MN 55015 USA, and you can call them from the UK by dialling 010 612 228 9142 but remember they are about five hours behind us, so don't start calling until about 2.30 in the afternoon.

And don't mock people who start out from the back of a garage. The who guys who set up the company that now produces the wonderful machine I use to write these pages first set up shop in a garage. Without them, there wouldn't be an Apple Macintosh IIfx.

H F-W

■ Game hunt

I recently played a game called *Kingdoms of England* on my cousin's Amiga. I think it was published by Incognito Software, but I could be wrong about that.

The idea of the game is to conquer as many counties of England as you can, until all the other players are forced out of the game.

Anyway, to get back to the point, is it available for the Atari ST, as I haven't seen it anywhere?

Jonathan Menezes, East Ham, London

Hmm. Some serious scratching of the brain went on when I put your question to our resident games experts. Eventually we worked out that Gainstar was probably the company that produced the object of your desire – but they seem to be no more. LIttle chance of helping you out it seemed.

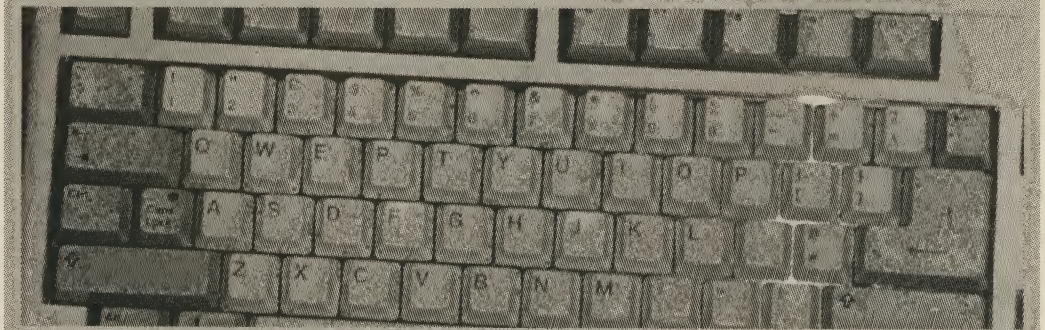
Then it all came flooding back – *Kingdoms of England* was a game that owed a lot of inspiration to that Cinemaware classic, *Defender of the Crown.* A copy of that would see you right, I thought – but is it still available?.A bit more digging, and we found that virtually nobody had stocks of ST *Defender* – UK Publisher Mirrorsoft apparently ceased to supply it a while ago. So it was tlme to use the old Fitz-Williams influence and get on the phone to Mirrorsoft.

Bad news, Jonathan! *Defender* is indeed not on the Mirrorsoft catalogue at the moment, and neither is the one compilation that included *Defender.* But Mirrorsoft's friendly PR person Cathy Campos searched through her drawers and found an ST copy of the *Triad* compilation, which features *Defender of the Crown, Barbarian* and *Starglider.* And by the time you read this, Jonathan, it should be in your possession with Mirrorsoft's compliments. How's that for service?

And if you like *Kingdoms of England* and *Defender of the Crown,* look out for the Level 9 game *Champion of the Raj,* which should be in the shops in a few weeks' time. It's set in India at the start of the 19th century and should suit your tastes exactly. But you'll have to buy that Mirrorsoft game for yourself Mr M – there's a limit to what even I can do...

H F-W

■ Shameless praise will get you everywhere



• Spot the deliberate mistake on this keyboard sent in by Ernest Smith. Nice one Commodore!

The loss of the machine specific columns that the letters you've printed recently refer to is of course sad for the owners of the more obscure machines, but they shouldn't use the departure of the columns as a reason to deprive themselves of reading an excellent computer-related magazine.

There are, I believe, many user group magazines for the MSX and QL which are produced by enthusiasts, which will surely fill the gap left by *NCE.*

At the moment I own an Atari 520ST but this does not stop me from reading and enjoying the other machine-specific columns, including the Amiga column.

In the future, it may well be the Atari or Amiga columns that disappear from your pages, but the content of *Express* would still be great enough for me to find it worth the purchase price.

Keep up the good work on *Express.*

Ernest Smith, Yorkswood, Birmingham

Well for such creepy crawling I can't offer you a fiver – much as the publisher would no doubt like me to. I'd be inundated with similar letters if I did.

But I'm glad to hear you enjoy *Express* so much – you seem to have a sensible attitude to owning and using a computer Ernest. It's meant to be fun afer all, not partisan war.

And there's little chance of us dropping the Amiga or ST columns before 1995 I reckon, and you and the 8-bit C64, CPC and Spectrum owners are going to be safe for a while...

H F-W

■ Man hunt

About a week ago I sold a number of programs and disks to a chap who lives in Werrington, Peterborough. Unfortunately, he did not collect a Disc Doctor chip which he'd paid for and, being an honest sort, I'd like to get it to him. We didn't exchange names and addresses when we met, but he drives a pale blue Reliant Robin and he's a regular reader of *Express.* Indeed, he introduced me to your magazine, so if he's out there, please get in touch!

Mr C Blake, 21 Svenskaby, Orton Winslow, Peterborough.

■ Out of date?

I bought a copy of the September issue of *NCE* from W H Smiths on Friday 21st September. Whilst I was reading it, I saw the competition to win an arcade machine (the younger family members would love one). I completed the answer form, only to discover the closing date had passed (17th September). Is this the fault of the newsagent for selling the magazine out of date, or was the closing date too soon?

If the latter was true, then perhaps it would have been fairer to keep the competition open until at least the publication date of the next issue. With the vain hope that my entry could still be included, I have enclosed my answers.

R H Le'Burn, Bracknell, Berks

Maybe you are a spot confused Mr Le'Burn. *New Computer Express* is a weekly magazine – so we had four issues during the month of September. The issue you speak of went on sale on 13th September, and then another one went on sale on the 20th September – perhaps the latest issue hadn't quite reached Smiths on the day you went shopping.

Anyway, yes we did set the closing date a little early, and as you might have read last week, we extended it to 1st October. Your entry went into the draw, and who knows... you might have won. You'll just have to buy next week's issue to find out!

Our publisher tells me to suggest that you might like to consider placing a weekly order for *Express*. Unless you're an MSX, Memotech or Sord M5 owner, you'll find plenty of relevant material in our pages, and as of this issue we're running a monthly competition as well as the regular weekly giveaways. End of commercial.

H F-W

■ Four computer man

I am 13 years old and have a Newbrain (bet you don't know what that is), a BBC, a Spectrum and an Amstrad PC. Until a few months ago I bough separate magazines for the latter three machines, but now I only buy your magazine. I was sorry to see the Beeb column go, but realise it is getting a bit long in the tooth. Keep up the good work!

R Morgan, Tyne and Wear

Oh yes I do know what a Newbrain is. And what a Sord, a Memotech, a Jupiter Ace, an Oric and a Colecovision is. And I know the difference between a Flan, an Elan and a teatray. So don't come it with me pal.

Four computers at 13 is a pretty good collection. Anyone else out there care to win a couple of tenners by sending me a picture of their computer collection? The dosh will go to the person with the most machines.

H F-W

■ Reformed character?

After seeing the adverts placed by FAST in your magazine, and also as a result of reading articles about the pirating of software, I have seen the error of my ways. I would like to do something to redress the balance (repent my sins if you like). I am in a position to supply FAST with the names and addresses of some of the major cracking and pirating crews on the Amiga, and some ST ones as well.

The reason I'm writing, is because at the moment I have not been able to replace all of my pirated software with either the original versions or suitable PD equivalents, but I'm still trying to eradicate all pirate software from my disk collection. Until then, will FAST be prepared to 'look the other way' regarding the pirate software I still have, in exchange for the above-mentioned information?

For obvious reasons, I am unable to supply my name and address, but if you could find your way clear to printing this in your letters page, then maybe it might just spur others into doing something about pirate software.

'Xeer'

Good start, but you still have a little way to go, don't you? Before thinking about 'shopping' other people, you would do well to clean up your own act properly. Talk of 'not being able' to replace pirated software simply won't wash as an excuse for hanging on to it – it's stolen property, and all you have to do is reformat the disks you've used to stash the ill-gotten gains of your thieving. You wouldn't seriously expect the police to 'look the other way' and let you hang on to the proceeds of a shoplifting spree if you tipped them off to a couple of burglaries, now would you?

Go on, do it now – reformat those disks and trash those photocopied manuals. You know you'll feel better for it.

Then by all means, get in touch with FAST.

H F-W

■ Nostalgic interlude

I have two things to say in this letter. First, I own an Amiga. Second, 8-bit games are better than 16-bit games (Ducks to avoid torrent of rotten tomatoes).

This may seem to be a ridiculous statement, but in terms of the capabilities of the computer it is true. What now seems aeons ago, I owned a Spectrum. The first game I ever bought was *Planetoids* by Melbourne House, This was followed by a torrent of other classics such as *Atic Atac* and *Jet Set Willy*, each better than the last. And if I now look at some of the Spectrum conversions being offered by software houses – titles such as *Chase HQ* spring to mind – I am absolutely stunned.

The fact is that the best games only come out after programmers have found all the fancy tricks and twiddles to impress people with. Then they can get down to the serious business of writing a good game.

What I say to the people who continue to say that software is too expensive and that their computer is the best, is: 'shut up and wait a couple of years'. You'll soon be looking back and remembering how good that 'game of the week' was in 1990 – and for only £25, you'll remember what a bargain it was.

Matthew Millar, York

Ah yes, I remember those days well Matthew. The days when we Spectrum owners waited with baited breath for the next release from Ultimate Play the Game and were astounded by what they managed to squeeze out of our rubber-keyed chum. It's a shame that a lot of the fun seems to have gone out of the games world – but maybe we've all got that bit older now.

At the moment I'm waiting with baited breath for the latest release of Quark *XPress*, but I won't be as excited as I was when I tore the shrink wrapping off the *Knight Lore* cassette.

Meanwhile I'm sending you a couple of fivers, Matthew. One for your letter that brought memories flooding back to me at my Mac keyboard, and another for your picture of the Amiga 500-2P you seem to own. Anyone else got some fond memories they'd like to share or a picture of their wacky computer they'd like to send me in the hope of collecting a fiver?

H F-W

■ Technical debate

William Poel is a leading light in the computer industry, so when he says in Issue 98's Opinion that users don't understand that 386/486 PCs are not just faster than ATs, no-one would dare demur, especially as he immediately says something else that shows that even the experts don't always understand the new kit.

The memory management feature which forces people to throw away 256K SIMM modules when expanding RAM in 386 PCs is not based on a simple con trick as he seems to believe, but is influenced by the desire for zero wait-state memory. Processors operating at speeds of 20MHz or faster simply outrun normal, affordable DRAMs, which start panting at about 16MHz (for 80ns chips). One way around this is to 'interleave' the memory, so that adjacent memory addresses are actually in different chips (the other way is expensive fast cache memory systems).

Interleaving means each chip only has to respond to every other memory access, so it only needs to be half as fast as the processor. Without interleaving, the processor needs to be hobbled by wait states during memory accesses, or the RAM falls over.

To make this trick work requires a more complex memory addressing system than Mr Poel envisages because interleaving requires symmetrical banks of RAM. My own 386 can have 1, 2, 4 or 8 Mb fitted to the main board, but only the 2Mb and 8Mb configurations allow interleaving.

I have it full of of 256K SIMMs giving 2Mb. If I had started with 1Mb SIMMs, I would have had to begin with at least 4Mb, and the computer would have run slowly because this configuration doesn't interleave. I wouldn't have been able to add one more Mb at a time, either, but only another 4Mb at once, because you are not allowed to partially fill the SIMM 'banks'.

This isn't down to industry 'rascals' supplying me a shoddily specified box, but a feature built into the main board architecture of my standard Taiwanese clone. Does it have to be? I don't know, but as everyone seems to do it this way, I expect it is necessary.

So, insist on 1Mb SIMMs if you wish, but be prepared to shell out for a bunch of them. They have 4Mb SIMMs now, too, so maybe the 1Mb ones are also a con?

Iolo Davidson, Tetbury, Gloucestershire

Nicely argued, Iolo, so here's four of my fivers to reward your lucid prose.

H F-W

MAIL SHORTS

■ SAM whinge

...the SAM is going to become very popular in the homes – games and serious software is widely becoming available and the future looks great for it. So why throw out the column? I have now cancelled my order until I see SAM return.

RHF Smith, Watford, Herts

Cheerio then. You'll miss out on the latest SAM news that we'll be printing in the main body of the magazine, and you won't get to hear of the doings of the users groups that we'll be reporting on in Shopping Express. Your loss, not ours. And this is the last wingeing letter I'm going to use from small-minded users of small-beer machines.

H F-W

■ Minority oppression

...I have never met a MSX, BBC, QL, PCW or SAM Coupé owner in my life. These moaning minnies should go out and buy a decent computer instead of hanging on to their 'door wedges'. I support your decision to drop their microscopic columns. Long live the Amiga!

A liberated intellectual from the beloved county of Tyne and Wear

Surprised you didn't put an 'r' in 'intellectual' really. You must have lived a really sheltered life...

■ Price is right?

How could you be so cruel? So ruthless of you to spring this price increase upon young and tender hearts. The embarrassment of having to rake the depths of my trouser pockets and other secret places for the extra cash in front of gawping middle-aged women while standing in a packed newsagents in Sunderland is no fun, I can tell you.

Martin Smith, Sunderland

Oh really now. We gave you fair warning.

■ Protext prat?

I read the anonymous article in issue 98, entitled 'Protext Survives'.

If *Protext* 5 has a spelling checker, why is 'complemented' spelled wrongly?

John South, Poole

It wasn't. We used the wrong word, but we spelt it right. *Protext* doesn't have a context checker, you see... it's a fair cop, though and wrists have been slapped.

H F-W

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MEMORY MAGIC

Is 512K not enough? A megabyte sound poxy? Keith Pomfret staggered under the weight of the RAM chips available to try out a total of 14 megabytes of Amiga memory on three cards.

The Amiga 500 was designed with expansion in mind. The trapdoor underneath, originally intended for a half-Mb upgrade, is positively bursting at the seams with upgrades of up to 1.5Mb, and the expansion slot on the side can play host to even larger amounts of memory. We looked at a pair of cards that can hide a total of 6Mb underneath and an external memory expansion box that lets you add eight megabytes

RAM-IN-A-BOX

The Cortex external 8Mb memory expansion is distributed by Memory Expansion Systems. It weighs in at a hefty £805, including the government's share of VAT. It's a lot of money, but you get a good return for your investment.

The Cortex memory expansion is a small cream brick-shaped box that plugs into the expansion slot on the left of the machine. It measures just over five inches square and stands an inch and a bit proud of the desk.

Because the extra 8Mb of RAM can get a little power hungry, the Cortex card comes with its own power supply and takes power from the mains via a transformer, rather than trying to suck the requisite volts from the A500.

For those not needing to go for an immediate 8Mb, the Cortex board is available populated at 2Mb and 4Mb and can be simply upgraded at a later date. If you think you can beat the prices of a populated board, Memory Expansions will supply the board bare so that you can add your own DRAMs.

Fitting the board is simplicity itself. It plugs straight into the expansion port of the A500. Plug in the 1-amp mains supply and boot up your Amiga in the normal way. For the purpose of our test an A590 hard drive was attached to the through-port to see if things warmed up. For those who don't have any extra peripherals to add to the expansion port, a blanking plate protects the through-connector.

With a hard disk drive in place, the A500 becomes a completely different beast with the gargantuan memory giving enhanced scope.

The Amiga excels at multi-tasking but memory-intensive jobs such as graphics animation, sound sampling and high resolution video come into their own on a machine with a lot of spare RAM. The bare 512K on an A500 is barely enough to run some single applications, and the multi-tasking abilities of the smaller Amigas go largely unsung. With the extra 8Mb in place, it is no problem to open up multiple files on a word-processor, download files from a bulletin board, lay out DTP pages and run an animation demo all at the same time.

Of course something has to suffer at the expense of multi-tasking and in this case it is speed. All of the tasks share the same processor, and must take their turn. In a word processor which isn't very processor intensive the slow-down is bearable, but the animation demo became positively pedestrian.

For a person on a limited budget, it's worth considering the bare board and upgrading, but if there's enough cash in the coffers, the full 8Mb takes a lot of beating.

UNDER THE TRAPDOOR

The slot under the A500 was designed for the half-Mb upgrade and not much more, but Dutch computer whizz-kids have managed to put a complete PC and 512K of RAM on a card to fit in the slot, and memory masters have squeezed up to 1.5Mb in by accessing the gate arrays directly.

The AdRAM 540 board bears more than a passing resemblance to some of the 1.5Mb boards already available. Its battery looked familiar; rows of DRAM chips and extra board on the end of a short ribbon cable to patch to Gary – the Amiga's custom gate array. But a count-up of the DRAMs reveals that this is no 1.5Mb board. It is available from a bare unpopulated board to a full 4Mb, in increments of half a megabyte. The review model was fully populated and came with the AdRAM 560D, a piggy-back board that gets the trapdoor RAM quotient up to a full 6Mb.

To fit the board, Gary was gently removed (using a non conductive extractor), and the ancillary board was placed in its slot. Gary was then plugged into the ancillary board's slot and the AdRAM 540, with a AdRAM 560 riding piggy-back, was inserted in the expansion slot under the trapdoor.

All of this RAM can get power-hungry, but the unexpanded A500 seemed to cope OK during a four-day test cycle. The board wasn't tried with any power-hungry peripherals, and indeed it would be no surprise if it turned up its toes in that instance.

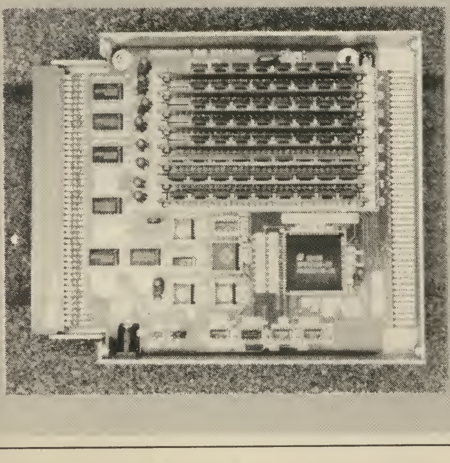
The board works OK and provided oodles of extra memory. If I were using one regularly on a machine with peripherals I would replace the machine's power supply with something a little more substantial.

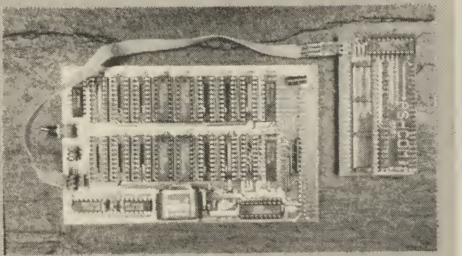
One of the problems with memory upgrades for the Amiga is that not all of them behave in a manner prescribed in the Gospel according to St Commodore.

Simply, this means that instead of allowing themselves to be paged wherever the system chooses, they pick a spot and expect the system to work around them.

While the Cortex system follows the rules, the AdRAM doesn't, which could lay it open to compatibility problems with add-on hardware. ■

EXPANDING OPTIONS





• The Cortex board (left) can up your Amiga's memory by up to 8Mb, a really useful amount, while theAdRAM can add 6Mb intenally in the trapdoor underneath the machine. With either of these boards in place the Amiga's multi-tasking abilities come into their own.

AT A GLANCE

Cortex A500/A1000 memory expansion

2Mb	£343.85
4Mb	£481.85
8Mb	£803.85
Unpopulated	£218.15

Cortex boards are distributed by Memory Expansion Systems on 051-236 0480.

AdRAM540

Bare	£99.99
4Mb	£499

Also available in half megabyte increments on request

AdRAM560 additional expansion board
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AdRAM is distributed by Third Coast Technologies on 0257 426464.

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- ★ ***Size:*** 8″ x 4″ x 1″ (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

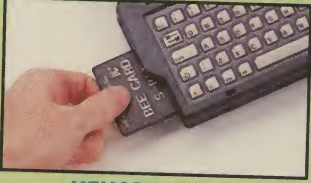
Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

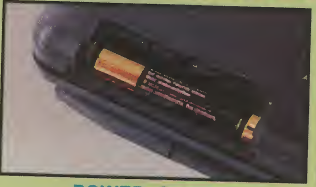
SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.



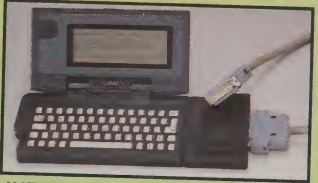
MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.



INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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Mark Higham's GAMES WEEK

With the CES show over it's time to choose the pick of the bunch. This week Express's games pro Mark Higham also looks at a polished new shoot-'em-up and takes time out to give you help on MidWinter.

The CES show was the biggest leisure software venue on the calendar, but was there anything new? The software publishers certainly had a wealth of games to show to their adoring public, but there wasn't much we hadn't heard about before. Of the games presented, there were only one or two which really looked like being huge hits and we've been talking about those for months. Yes, *Powermonger* looked good and yes, *BAT* was pretty shit-hot too. But screenshots, interviews and reports about *Powermonger* have been intense for weeks, and *BAT* was on display at the last two PC shows.

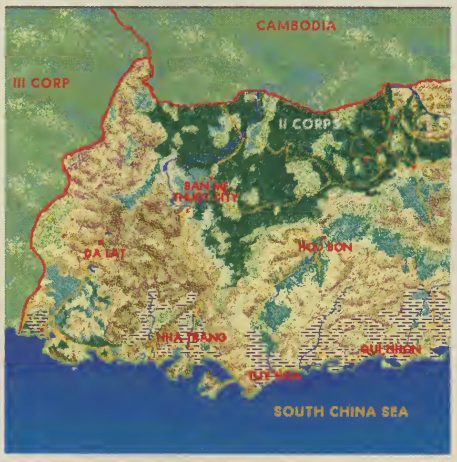
The publishers might argue that games are now of such high quality that we've become blasé about them. They're all good so nothing really leaps out. OK, so maybe programmers might really have pushed the ST, Amiga and PC to their limits in terms of graphics capabilities, but it's good gameplay, speed and originality which makes winners like *Populous.*

Enough complaining and on with the show. Here are a some of the best games around. You should be kicking yourself if you went to the CES and missed them.

OFF TO WAR – AGAIN

You may remember a game released by Electronic Arts a few months ago called *Imperium.* It was a complex strategy/space-trading game with an amazing attention to detail, which meant the slightest movement in one area of the game could have enormous consequences in another. Now designer, Matthew Stibbe, strikes again with a game for Domark called *Vietnam* or *'Nam* for short.

This simulation of the Vietnam war is more than just another wargame. There are two aspects to the game – political and military. You play the role of the American president, and through military power and economic support you control the extent of America's commitment to Saigon.



• Imperium *game designer Matthew Stibbe comes up with a follow-up.* 'Nam *is a wargame simulation of the Vietnam war from 1965-1975, in which you play the American President.*

Matthew believes he has spotted the problems with *Imperium* and rectified them in *'Nam.* For example, whereas *Imperium* had very little graphical content but enormous detail, *'Nam* includes a redesigned user-interface and graphics which enable you to interact with the game far easier.

A NEW POPULOUS?

Outlands is another promising title, this time out of the Millennium stable. It won't be ready until spring next year but it's likely to stir up considerable interest nevertheless.

The playing screen bears a close resemblance to *Populous* but that's where any similarity ends. You play the role of an American Indian spirit in *Outlands* and the idea is to influence the characters in the game. For example, you could put the spirit into a cowboy and influence him to rob a bank. With the Indian homeland under threat from greedy landowners you need to resort to such drastic measures to try and protect it.

PLAYING TIPS: getting through the depths of MidWinter

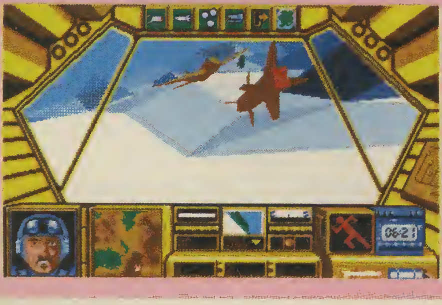
MIDWINTER • Rainbird

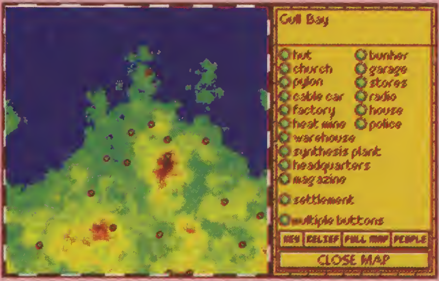
This week's essential playing tips come from Amir Sharif in London.

▲ If there are enemy vehicles after you, try and evade them by going at 80mph or more in your snow vehicle and dodging in and out of hills and valleys. If they fire a missile at you, which is almost certain, then employ the same tactics, ie. swing from side to side and head downhill into a ravine in an attempt to destroy the missile. If you spot the enemy vehicle then fire a missile at it.

Make sure you lock-on at long range because short-range refuses to lock. Otherwise use a drone on them at close range to kill them with ease. If you're lucky the enemy vehicle you destroy could contain an enemy captain who is shown to you, along with statistics of his fighting unit including the number of men who've deserted and any abandoned enemy vehicles.

Two of the captains are Hossbach and Nielsson.





Hossbach can be found roaming the lowlands of Fox Plateau. Nielsson is an ugly piece of work who keeps a patrol guarding the synth factories round the Caheta Hills.

▲ If you're on your skis and there's a missile on your tail the best way to avoid it is to ski from side to side, leaping behind mountains to delay it. If this doesn't work start tossing grenades at the missile as it flies in front of you. These can sometimes act as a decoy.

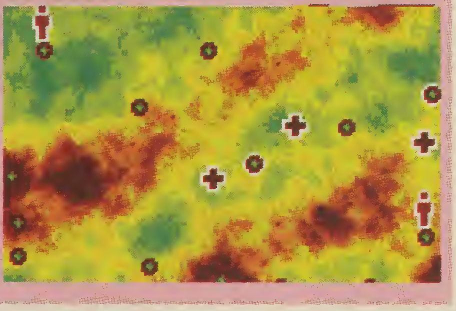
▲ Sniping at things isn't too hot sometimes since this area of the game tends to be a little jerky. When firing at moving obstacles always keep the sights just a tiny bit above or below your target and keep firing.

▲ To see some excellent mountain ranges head for Terceira and Blue Mountains and hang-glide round the area. You get the best thermals off the sides of mountain terrains and generally you lose height and speed when you fly over level ground.

The trick to successful hang-gliding is to take off at 21 or 25mph rather than 20 and pull back on the joystick or mouse to attain a good height – 150 or more from the mountains. Now level out, drop a little to pick up speed then go up again to regain height. Keep a good watch on your height and speed as well as the terrain. In this way, if you start to lose height at least you are going to land without breaking your neck.

▲ For those of you who just want to complete the game in as fast a time as possible simply send Stark out on a solo mission. Direct him off to Shining Hollow using the most direct route you can find and when you reach Shining Hollow, bomb it mercilessly. Though this is a valid route through the game it involves none of the ordinary strategies required in an ordinary game.

Send your tips to Mark Higham's Gamesweek, New Computer Express, 30 Monmouth Street, Bath BA1 2BW



The name and scenario of the game might change in the coming months. I hope they don't lose the Indian idea because it sounds enticing, but whatever happens, keep an eye open for this one.

AN ARCADE CHRISTMAS

If you spend the occasional hour (and five pound note) down the arcades, you can't fail to have noticed *Dragon Breed*. Activision have acquired the licence to this coin-op monster and are busily writing the home micro conversion to meet Christmas.

For those of you who aren't arcade fans, *Dragon Breed* is a horizontally-scrolling shoot-'em-up boasting six colourful levels. The hero of the game sits astride a Chinese dragon made up of 13 segments. During the action you can move around so that the dragon's tail curls in front of you, protecting you from the firepower of some mammoth aliens. When necessary, the hero can climb off the dragon and walk along the ground with his giant laser cannon.

Early demos suggest the programmers have caught much of the excitement of the game's arcade parent. ST and Amiga conversions are being coded as well as conversions for the popular 8-bit micros.

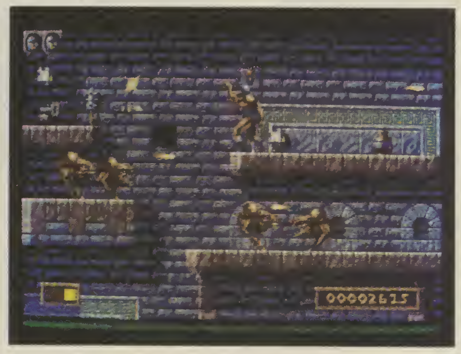
FAME AND GLORY

The Bitmap Brothers, the team responsible for such classics as *Xenon II* and *Cadaver,* have ceased working for Mirrorsoft and have set up their own software publishing company, they announced at the show. The company is the result of a partnership between The Bitmaps and Rhythm King Records.

The philosophy behind Renegade, according to Bitmap Brother Eric Matthews, is to give the fame back to the programming team. "When you buy a record", said Eric, "you don't expect to see the name of the record company splashed all over it. It's the artist who gets all the glory." This was the reason they decided the Renegade logo would appear in tiny letters on packaging with the programmers' name dominating. This is no token effort to pacify whingeing programmers though. The company will operate on a profit-sharing scheme whereby 50 per cent of all profits are shared among the people responsible for a particular game.

The Bitmaps see one of Renegade's strengths as the fact that it's related to a record company. They believe this gives them the perfect opportunity to exploit the potential of multimedia.

The first big title to fall under the new label will be *Gods,* an eight-way scrolling arcade adventure game due out towards the beginning of next year. This will be followed a few months later with *Magic Pockets*, a cutesy game, with a hero called The Bitmap Kid, with five levels picking up water pistols and boxing gloves. ■



• *Gods will be the first of the Bitmap's games to be released on Renegade – but it's not expected until next year.*

THE GALLUP 16-BIT TOP TEN

For the week ending 15th September

	Last Week	Game name	Publisher	Format
1	1	CORPORATION	Core Design	Ag
2	2	KICK OFF 2	Anco	ST Ag
3	9	SHADOW WARRIORS	Ocean	ST Ag
4	8	ITALIA 1990	Codemasters	ST Ag
5	19	WINGS	MirrorSoft	Ag
6	16	MIDNIGHT RESISTANCE	Ocean	ST Ag
7	RE	SHADOW OF THE BEAST 2	Psygnosis	Ag
8	7	F19 STEALTH FIGHTER	MicroProse	ST PC
9	3	TARGHAN	Action 16	ST Ag PC
10	17	LOST PATROL	Ocean	Ag

ST – Atari ST Ag – Commodore Amiga PC – IBM PC

Chart compiled by Gallup. © European Leisure Software Publishers Association.

THIS WEEK'S GAME REVIEW

WINGS OF DEATH

THALION/ACTIVE • £24.99

We all thought the vertical scrolling shoot-'em-up had died after *Xenon II*. You just can't go on regurgitating a hackneyed game style over and over again. Well, Thalion are having a go with *Wings of Death* and the signs are that it's remarkably addictive.

***Wings of Death* is a vertically scrolling shoot-'em-up in the traditional mould. The objective is to race through a series of levels mindlessly blasting everything you meet. Pick up a few good bonus pods along the way, watch out for the lethal pods and wait for the end-of-level guardian.**

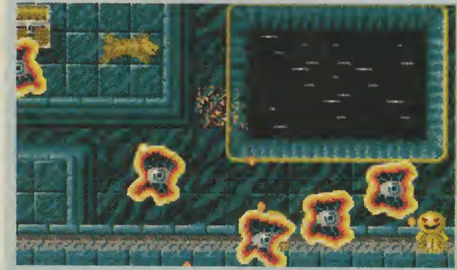
***Wings of Death* has all these points and no more. In this case you start the game with a tiny mosquito-type creature and the bonus pods build up your size and increase your firepower. Watch out for skeleton pods, which kill you, and try to collect any 'new life' pods you spot en route.**

The end-of-level aliens have been wonderfully animated to be clear, precise and detailed. All the backdrops are very bright, following an Egyptian theme, which offers enormous scope for many golden, crimson and black enemies.

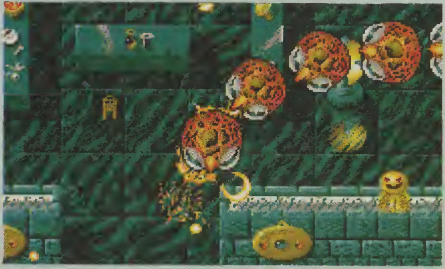
Sampled speech informs you whenever you collect any of the many bonus pods and other sampled music is used as an intro theme and during the action on ST and Amiga formats.

It says something good about a shoot-'em-up when you spend the entire game comparing it to *Xenon II*. Play *Wings of Death* for a few moments and you find that's exactly what you do. However, there's no disputing that, apart from some excellent visuals, *Wings of Death* doesn't present anything new.

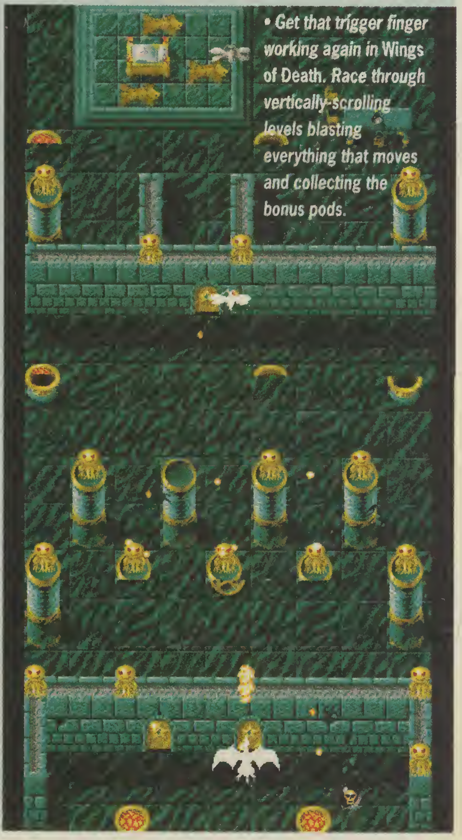
If you're still desperately trying to work your way through level three of *Xenon II* then there's no point in buying *Wings of Death*, but if you're missing intense arcade-style action then this fills that gap.



• *It's the attack of the killer amoebas in* Wings of Death*, a 'mindless blast'.*



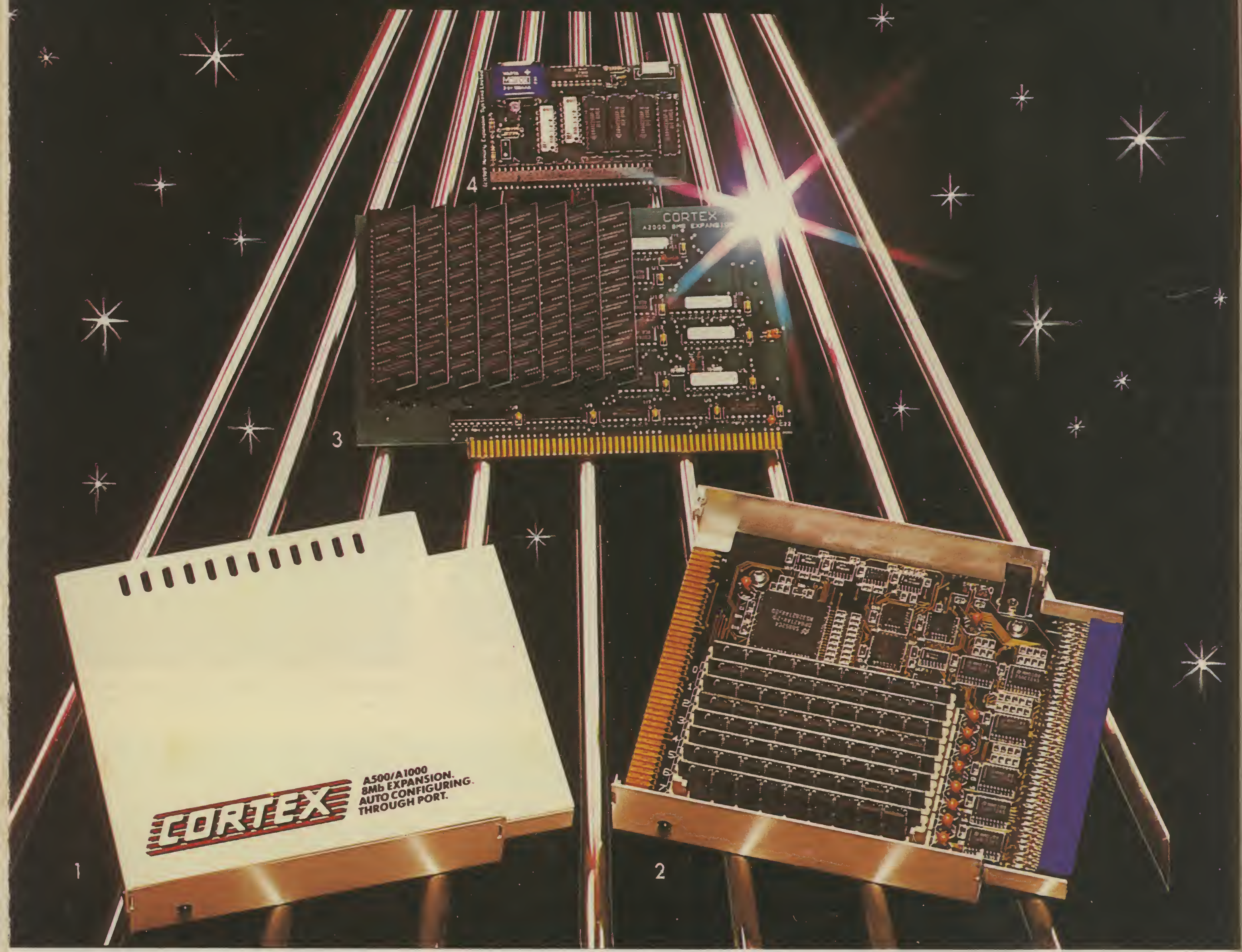
• *You haven't just got end-of-level guardians to deal with – there are gruesome monsters everywhere you fly.*



• *Get that trigger finger working again in Wings of Death. Race through vertically-scrolling levels blasting everything that moves and collecting the bonus pods.*

A LONG TIME AGO IN A GALAXY FAR FAR AWAY, *IT WAS DECIDED*
THAT THE WAY TO EXPAND AN AMIGA A500 *BEYOND ONE MEGABYTE WAS TO*
OPEN THE HOST MACHINE AND FIX THE EXPANSION *MEMORY INSIDE, THUS*
INVALIDATING THE WARRANTY, OVERLOADING *THE POWER SUPPLY AND OFTEN*
CAUSING DISASTEROUS HARDWARE INCOMPATABILITY *PROBLEMS*

......................THEN *CAME* ....



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2. As above, but with the cover removed.

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CONTENTS

AMIGA 22
News of Photon Paint

ARCHIMEDES 23
More games on the way

CPC 24
The console: is it the future?

C64 26
Games action

PC 27
Excitement at the shows

Spectrum 28
Here there be pokes

ST 29
An alternative Desktop

Whole Wired World 36
Steve Gold at large in a new column

Centrefold 39
Special 100th Birthday edition

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The weekly bulletin board and user group guide

The Console Zone 65
Hints, news and reviews

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AW.03 Icons; 100's including; the amusing Naughty Icons, Ram Icons, Music Icons...plus Icon utilities.
AD.01 Walker demo 1; animation of Star Wars Walker (need 1MB)
AD.04 Probe Sequence; Simulation of video pictures from an interstellar probe landing on an alien planet!
AD.21 Busy Bee; Amazing 3D Ray Traced animation! + Tree Frog!
AD.23 Ship & Sphere; Super Smooth Ray Traced animation!
AD.25 The Run; Superb 3D Car chase.
AD.29 Predators Megademo; stunning sound & animation! (2 Disks : £3.99)
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Amiga

PATCH WORKS

Sound Quest Inc, the Ontario-based company which produces one of the most comprehensive ranges of synth-patch editors for the Amiga, has released a new product in the shape of *MIDI Quest*, a universal editor/librarian. The program offers configurable MIDI drivers, integrated graphic editing and multi-instrument filing capabilities. *MIDI Quest* lets you manipulate synth-patch files created by *Sound Quest* products on both the Amiga and other musical micros. These can be edited within *MIDI Quest* to create new banks of sounds by cutting, pasting, mixing and blending patches from other banks.

MCM used to handle the distribution of *Sound Quest* products, but has since ceased dealings with the company. As a result, no one actually seems to know who is handling said products. If you're one such company, then let me know and I'll pass on the good news. Otherwise, you can phone Sound Quest directly on 0101 416 256 0466.

PHOTON THREE

Photon Paint 2 is already generally regarded as the number-one paint package for HAM painting on the Amiga, but MicroIllusions has announced that it plans to release a major upgrade to its paint system very soon. Not surprisingly, the new release is to be called *Photon Paint 3*.

Unfortunately, at time of going to press, no specific details were available, but I'll bring you more as soon as the fax arrives. Expect to see the definitive review in *Express* soon, and look out for a new version of this old favourite.

EMULATION SENSATION

No sooner has Medusa released its £180 hardware-based Atari ST emulator for the Amiga, than another company has gone one better by producing an emulator that is completely software-based. *Chameleon*, as it is called, emulates the Atari completely through software, and it is claimed that the emulator operates just as well as the Medusa card.

This is hardly surprising when you consider that Medusa admits that the hardware itself handles nothing more than I/O. Even though both the Medusa card and *Chameleon* are very much software-based, both manage to emulate an Atari at nearly 90 per cent its original speed. Packages such as GFA BASIC, *Calamus* and *Pro-24* are claimed to work without a hitch.

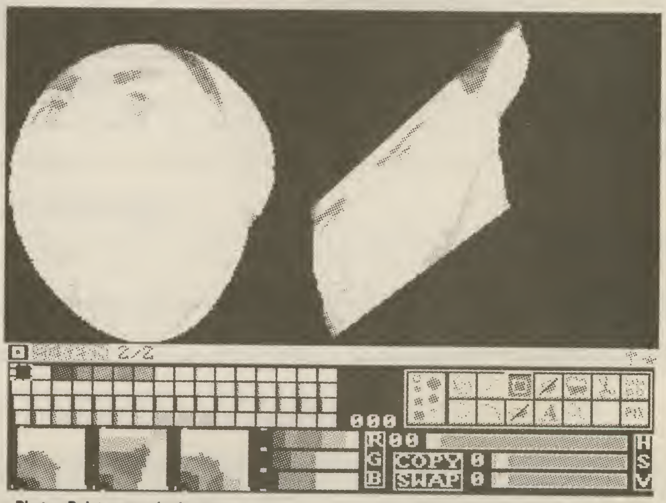
The good news about *Chameleon* is the price. Although not finalised, it is believed that *Chameleon* could sell for as little as £30 – which is about £150 cheaper than the Medusa card!

MUSIC-X 1.1 ARRIVES

As you will all no doubt be aware, MicroIllusions has finally got around to releasing version 1.1 of *Music-X* (well, you should know about it – I devoted a large chunk of my column to it only a couple of weeks back!). Thanks to those very nice people at The Software Business (which is the UK distributor for MicroIllusions' stuff), I've been happily playing with it for a couple of weeks now. Here's what I thought of it.

Probably the most noticeable enhancement is the inclusion of an all-new event sculpting option within the bar editor. Just like *Master Tracks Pro* and *Pro-24*, this allows you to change continuous controllers by dragging the mouse across the desktop to physically 'draw' the controller. Even after just a few minutes use, you'll wonder how you ever managed without it. Also new is the *Velocity Flattener* module which allows you to set the velocities of a group of notes to a user-specified size. Just by setting the velocity for the first selected note, and the velocity for the last note, *Music-X* will fill in the gaps between, thereby allowing you to create volume 'ramping' effects.

If you're lucky enough to own a 2000 fitted with a multi-serial card, then you'll be able to access a maximum of 128 different MIDI channels. These are split up into groups of 16 separate channels, each of which is connected to the Amiga through its own MIDI interface (hence the need for a multi-serial card). I unfortunately don't possess such an item (anyone want to



• *Photon Paint: upgrade due soon.*

loan me one?), so I can't tell you how well it performs. All I can say is that I'm impressed. *Music-X* was brilliant, but Microllusions has improved it still further. *Music-X* is quite simply the most complete MIDI sequencing system available for the Amiga. As Lynette Numan would say, 'The best just got better!'.

GOLD DISK GOODY

Integration was the big thing only a couple of years back, but now software manufacturers seem to have gone back to their old bad habits of producing incompatible productivity software.

Gold Disk, though, knows a thing or two about what the user really wants. Not content with producing the market-leading spreadsheet and DTP systems for the Amiga (*Advantage!* and *ProPage* respectively), Gold Disk has released a new integrated business package called *Gold Disk Office*. The package brings together a powerful word processor, database management system, desktop publishing, spreadsheet and business graphics system together within one package. It's still unclear whether these are entirely new packages, or just rebadged products, but either way, the *Gold Disk Office* package sounds like good news for anyone wanting to pull together a decent selection of business applications software.

PROGRAM WITH VISION

Commodore has finally started selling its *Amiga Vision* multi-media authoring system to non-A3000 owning Amiga users. The system, which allows complex multimedia applications consisting of video, graphics, sound, animation and text to be pulled together, is being offered to American users for $150. No details yet about any UK release dates, but rest assured that I'll be bringing you a full review as soon as I get my sweaty mitts on a copy. Until then, contact Commodore on 0627 770088 for more.

FROM ACROSS THE POND

Consultron, the Miami-based company responsible for that incredibly useful file-transfer software *CrossDOS*, has released a new version that combats many of the problems found within the first release.

CrossDOS version 4 (don't ask me what happened to all the other releases) now works very nicely thank you with the new Workbench 2.0. Not only that, but Consultron has doubled the speed of all reading, writing and formatting of MS-DOS disks.

Inner Circle Software has finally released its long-awaited (and extensively pirated!) Amiga BBS software, *Paragon*. The software allows up to ten users to log-on simultaneously, therefore allowing users to indulge in conferencing and multi-user games. *Paragon* allows you to create up to 128 message and 40 file areas. Also included is a download utility which allows users to compress their uploads into either ARC, LZH or ZOO formats. More info can be extracted from Inner Circle on 010 214 241 6060.

Jason Holborn

Archimedes

THE SHOW MUST GO ON

After you'd ogled the A540, marvelled at the ARM 3 upgrades and positively gawped at the VidC enhancers, you might have been led to believe there was no life left in your standard Arc! Well don't worry, there was plenty of software available (and even more as yet unavailable) to keep you entertained for many months to come.

The two most impressive things I saw were *Tracker* from the Serial Port and *Elite* running on the Arc; more of this later. *Tracker* is a fully blown sound-track creator and player. Many of you will have a copy of the sound tracker module that has been in an almost constant state of development over the last year. Apart from the obvious cosmetic improvement over the later PD versions of sound tracker, *Tracker* is capable of dealing with up to 31 instruments on eight tracks (rather than the four which lesser machines are restricted to). The complete package costs five pence less than 50 quid and comes on five disks, including two disks full of instruments and one of example tracker modules. Very early versions suffer from a few silly bugs and rather a poor manual, but both of these will be tidied up for the official release.

Also on the Serial Port stand was the latest version (number seven) of *ArcTerm for '80*, and demo versions of *BlowPipe* and *WorldScape* for 20 pounds apiece. Both the latter were first mentioned in *Express* 97. *ArcTerm 7* now comes complete with a scripting language for writing your own terminal emulators. *Blowpipe* is "99 per cent finished," and features all the bits you'd expect to find in a shoot-'em-up. At a first glance it looks a bit quicker and smoother than *Nevryon* and may well have the edge. Watch out for a full review soon! *WorldScape* is a world simulator, and you can't say fairer than that, can you? As far as I could make out, you have to control pollution levels and the like and watch out for the ozone layer!

Serial Port is on 0243 531194.

ARCHIMEDES ELITE?

So what was that about *Elite* on the Arc, I hear you ask. Well, if you wandered over to the Arxe Systems stand you may have seen the rather familiar sight of a spinning wire-frame space craft, that is if you could make it out from the blur on the screen! You see, someone seems to have written a BBC emulator that runs up to three times faster than the original BBC!

Arxe is currently negotiating with Acorn over the rights to *Elite*, as well as a number of other companies, with a view to putting together a package of super-fast emulated BBC games. The games need to be tweaked to a certain extent, mainly in the line-

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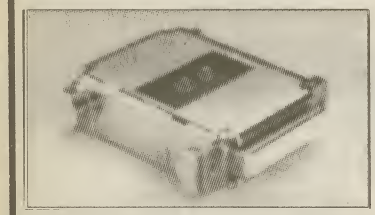

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drawing and other graphical areas, but there are currently versions of *Exile* and *Frak* working.

Arxe told me the only problem at the moment is that the games are actually too fast and will need to be slowed down, apparently docking is nigh on impossible! Arxe is also still trying to ascertain the holder of the copyright for the Spectrum ROM. This is all that is holding back release of the eagerly awaited Spectrum emulator, The *Speculator*. Again, perhaps a package with the emulator and some games is possible. With any luck it might actually see the light of day by the end of the year.

Finally from Arxe is the *MultiFS* filing system. This is a very natty utility that allows IBM, ST and BBC DFS format disks to be read quite happily by the Archimedes. Once installed, *MultiFS* behaves in exactly the same way as an ADFS drive, including all loading, saving and copying functions, as well as free space and disk formatting. Full hierarchical directories are supported and it will even deal with PC emulator hard disk partitions. In fact you'd never notice the difference between it and your usual filing system. All this for £35? How can you go wrong!

Arxe is on 081-534 1198.

CAN I PLAY WITH MADNESS?

The more alert of you may have noticed a game rather similar to *Terramex* lurking about on a couple of stands. This isn't really that surprising (the similarity that is) as it was, in fact, written by the same person! This new game, *Mad Professor*, even has a similar feel to *Terramex* and the graphics are certainly reminiscent of the head-scratching missionary! In essence you control the prof and have to close down five laboratories, I'm sure there must be a good reason why! This is definitely a pick up and explore game – quite a welcome change from the current plethora of bomb-them-to-bits type affairs.

More news on the same, i.e. non-violent, lines comes from Magnetic Scrolls. Its latest adventure, *Wonderland*, is currently undergoing final bug testing (hooray!) but may not actually be available until early next year (boo!). Virgin, which will be selling it, wants to hold off release until after the PC, ST and Amiga versions are ready, so details such as loading pictures, packaging and advertising are all finalised. More details as and when I hear.

THE FRENCH CONNECTION

The only other game I managed to see at the show was *Tactic*. This is a possible release from Sisteme, the French company responsible for the circular breakout game *Ballarena*. *Tactic* is very much a second generation *Tetris* and is in fact an exact conversion of a French arcade game. As in *Tetris*, you must guide falling objects and attempt to make lines. The difference being that in *Tactic* the shapes are coloured squares and the lines need only be three long, but in any direction. Numerous bonus squares appear giving you extra time or points. There is also a two player mode. Sisteme is on (010 33) 67 70 53 97.

And finally this week, a small piece of news from Ireland. Due to recent cutbacks, Bytron, the only Acorn distributor in Ireland has had to be closed down. However, all is not doom and gloom as the managing director and four former employees have set up a new company, Award Computers Ltd, which will continue where Bytron left off. Award can be contacted on 0001-954 511/2/3/4

Ken Coumarin

PC

SHOW STOPPERS

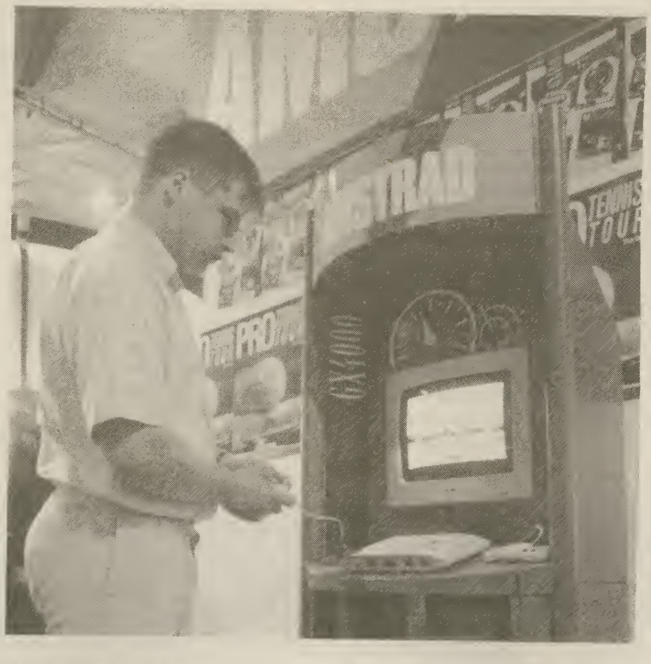
Did you all manage to get along to the Computer Entertainment Show at Earls Court then? I haven't been able to find out any figures for attendance, but on the public days, Saturday and Sunday, the place was jam-packed.

For my money (well, I'm bound to say it, aren't I?), the main attraction at the show was the Amstrad stand. No fewer than 42 new machines were set up and running console software. Very little of it is finished and ready for distribution yet, but what was on show was very impressive.

But for the best selection of console software, visitors could do no better than try out the new promotional unit Amstrad has designed for retailers to put in their shops. Shaped like an arcade cabinet, it houses a monitor, GX4000 console, game paddles and a rack which will contain all the latest software. A colourful 'front end' lets you choose from 12 different games, and the idea is that punters can actually play the games in the shop before they decide to buy. Can't be bad! That move alone should not only double Amstrad console and software sales, it shows just how much thought (and cash!) Amstrad has put into the new machines.

Most of the games on the demo unit were old favourites. *Batman – The Movie*, *Barbarian II*, *Klax* and *Operation Wolf* didn't look much different to the CPC versions, but then maybe they're not finished yet. *Burnin' Rubber* was there in all its glory, as was *Fire & Forget II*. Titus also had a (rather bare-looking) version of *Crazy Cars II* installed. Two French tennis sims – Ubi Soft's *Pro Tennis Tour* and Loriciels' *Tennis Cup* – were on the unit too. In both cases, the console hardware had been used to turn the main playing sprites into highly-detailed 16-bit-quality characters, while *Tennis Cup* had a lot more colours in the background.

The remaining two games were extremely interesting. One seemed to be called *No Exit*, but there was no indication of the publisher. It was a martial arts kick-'em-up set against excellent backgrounds. Finally, Gremlin's *Switchblade* is a cutesy kick-'em-up which, boldly, doesn't go for 16-colour mode, even with the advantage of the



• *Amstrad's new console demonstration unit, being ably demonstrated by ex-CPC columnist Steve Carey. It should be appearing in shops soon. (The console unit, that is.)*

uprated hardware. Instead, Gremlin has gone for small, highly-detailed sprites. The designers have, however, used the new sprite hardware quite cleverly. Although the game is programmed in four-colour mode, using some of the hardware sprites as objects the programmers have got eight, 16 and even 20 colours on-screen at once.

The only disappointing thing is that *Switchblade* may never make it to the console. Apparently, Amstrad isn't convinced its quality is good enough. Well, as far as I'm concerned, Amstrad is completely wrong. Still, we'll all just have to wait and see, won't we.

The rest of the show was mildly disappointing. Where were all the new console games? I did think the show would be used as a platform to launch them all, but I guess everyone is simply gearing up for Christmas.

PLUGGING INTO THE PLUS

Anyone who's got a CPC at the moment and is thinking of upgrading to a Plus, will be worried that all their old peripherals won't work. The new Plus models have a proper D-socket expansion slot, instead of the old machines' rather crude edge-connector.

Thanks to WAVE, however, there's nothing to worry about! The company has put together a special D-plug-to-edge-connector adapter that simply plugs into the back of a Plus and accepts all standard CPC peripherals.

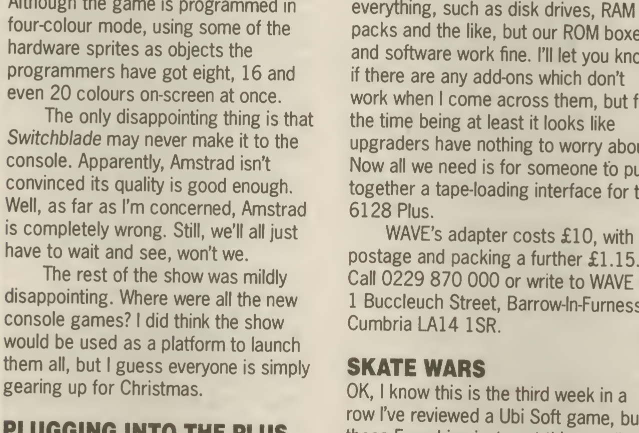
We haven't had a chance to check everything, such as disk drives, RAM packs and the like, but our ROM boxes and software work fine. I'll let you know if there are any add-ons which don't work when I come across them, but for the time being at least it looks like upgraders have nothing to worry about. Now all we need is for someone to put together a tape-loading interface for the 6128 Plus.

WAVE's adapter costs £10, with postage and packing a further £1.15. Call 0229 870 000 or write to WAVE at 1 Buccleuch Street, Barrow-In-Furness, Cumbria LA14 1SR.

SKATE WARS

OK, I know this is the third week in a row I've reviewed a Ubi Soft game, but those Frenchies just sent this excellent batch of software in out of the blue and I've been playing them ever since.

Skate Wars is the least ambitious of the bunch really. You're not saving your kingdom from an evil ruler, as in *Iron Lord*, and you're not sucking your way through five long levels as you are in *Night Hunter*. Instead, it's just you, your opponent, a pitch and a ball. Except it's actually an ice rink rather



• *Ubi Soft's Skate Wars. It makes ice hockey look like a walk in the The PD Column.*

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than a pitch, and your ball is solid steel. Oh, and your opponent is an armoured, psychotic thug. Apart from that, it's just clean, honest fun.

The aim is simple. You have to skate down the pitch, line up in front of the enemy goal and slip the ball past the keeper. At the same time, your opponent is trying to get one past your team-mate. How do you get the ball off the other guy? Kick his legs out from under him! Might as well – he'll do the same to you! The first player to score five goals is the winner (the goalies themselves are pretty easy meat), and then you go on to the next round.

Ah, what's this? A couple of solid-looking mushroom shapes have appeared on the ice. They are solid, too. Hit one of these and you're sent sprawling, losing valuable seconds as your opponent skates up the ice with the ball. Later levels include bottomless pits and more obstacles.

Graphics are excellent, with detailed and well-animated sprites, and the whole thing is fast and smooth. It's this, and the sheer playability of *Skate Wars*, that makes it such a great little game. Look out for it.

100TH BIRTHDAY!

Just in case you hadn't noticed, this is the centenary issue of *New Computer Express* and the CPC Column. Well done to the *Express* team! (Send all your telegrams, birthday cards, presents, cheques etc to me at the usual address.)

Rod Lawton

64

NEVER SAY NEVER

Despite the reticence to show anything at the CES, software developers are wisely entering the C64GS rumour market at a healthy rate. Anco kicks off with *Kick Off*, *Turrican 2* and *X-Out* only weeks after El Singh said he wouldn't do anything on cartridge until his company had written its own development system (so don't hold your breath for *Turrican 2*). Electronic Zoo might convert *Subbuteo* and *Orcas*. Neither lend themselves to further development but they would make a happy bundle. And speaking of bundles, apart from Commodore's own (*Klax*, *Freddy*, *International Soccer*, *Flimbo's Quest*), *Jack Attack* may also finally attain solid state.

The Disk Co is said to be dusting off *Rick Dangerous* and *Stunt Car Racer* and, again, these would make a formidable bundle. More exciting would be enhanced versions of both. Meanwhile, not to be left out of the confusion is MicroProse, which is dropping names like *Rick Dangerous II* (excellent) and *Starglider II* (why?), or Thalamus who are apparently going to convert everything they've ever done.

DON'T WORRY

Ocean will not miss owt, is t'message from up north. It must be safe to take an improved *Batman* as given and there seems to be more. *Special Criminal Investigation* (the *Chase HQ* sequel), *Robocop 2*, *Operation Thunderbolt* and *Navy Seals* are all names being bandied about by the careless – or is that 'well informed'? The fact (just about the only one concerning console software at the moment) is that ROM versions of *Navy Seals* and *SCI* are both mouth-wateringly near to completion and show exactly what the C64 has missed out on by not having a ROM software base in the past. In *Navy Seals*, an ultra-well defined character sprite leaps around detailed backgrounds, helping itself to the large animation routines that the developers finally have access to. Only the soundtrack needs to be added in fact. *SCI* makes more use of speed than fancy graphics, though it offers some of both. It certainly would appear that this is going to be the fastest driving game ever on the C64. Ocean is making a smart move by ensuring its first console releases are completely new.

If what's being said about Mindscape is true, that it's working on a version of *Ultima VI* which will actually be battery-backed (there's no reason why this can't be done) then it will be the first time since the original that any *Ultima* game will have been truly playable on anything smaller than a 16-bit machine. Another role-playing game, from Ubi-Soft, is also doing the tongue-wagging rounds at the moment. But despite it's title, *B.A.T.* has nothing to do with big business take-over failures, so how it might do is anybody's guess.

US Gold is way down, disappointingly so, in the 'cannot confirm or deny' stakes at the moment. There was only talk of one game being converted to cartridge and that was *Moonwalker*. Of course, nobody believes that and that includes USG. So what are they doing? Keeping shtum, that's what.

System 3 definitely isn't mucking around. *Last Ninja 3* will only be available on cartridge at Christmas; the launches of other versions have been postponed. Probably following *LN3* will be *Last Ninja Remix*, *International Karate Deluxe*, *Vendetta* and *Myth*, in no particular order.

The really wild speculation department has been occupied by Domark's *Vindicators*, *Cyberball*, *The Spy Who Loved Me*, *Badlands*, *Stun Runner* and a special version of *Hard Drivin'*. As these are all fresh entries to the 64 world anyway, their appearance in ROM could really do the console some favours.

A quick round-up of the rest includes Infogrames (*Prohibition* and *Bubble Ghost*), Mirrorsoft (*Bloodwych* and *Falcon*) and Titus (flip a coin: if it's heads then *Dick Tracy* is on). Finally, Epyx has just got to live up to what's being said about it and bring out *The Games* (*Summer and Winter and California*). Yes, well...

SHOW TIME

Thanks to Adrian Betts for this news: If you're likely to be in the Tamworth area on Saturday December 1, do your curiosity a favour and take it to the eight-bit Micro Show, being held at the Tamworth Arts Centre. As its name implies, the show will have something to offer most eight-bit computer users and loyal Commodore comrades will be able to see something of the support that still exists for the C16, Plus 4 and – a moment's silence, please – the VIC 20, not to mention the C64 itself. Both a C64 and a Plus 4 will be set up running games for public participation and software will be on sale.

Entrance to this Aladdin's cave of computing will be a can't-say-fairer-than-that 50p and you can stay for as long as you like between 9.30am and 4.30pm. Anybody under the age of ten walks in free. Over twenty stands are currently booked. There will be plenty of PD and demo material on which to feast your eyes as well. Incidentally, a few stands are still available for any user group or company that doesn't want to miss out.

Further details are readily forthcoming from Adrian Betts at Turbo, 8 Healey, Lakeside, Tamworth, Staffs B77 2RF. Be kind enough to enclose an SAE.

Next week: A new operating and terminal emulation system for the C64; pokes; hardware

P.S. I want to hear from User Groups and PD feeders. Prove you exist.

Sean Masterson

PC

OFF WE GO TO THE SHOW

It's been a busy couple of weeks for shows. First the Computer Entertainment Show, then last week's Business Solutions '90. Both were in Earls Court, both featured computers, but they could not have been more different.

The Computer Entertainment Show, as you must have noticed from *Express* 98, was about games; Business Solutions was about everything else. CES was held in the balcony at Earls Court, Business Solutions was in the main hall. CES was thousands of teenagers being smiled at by girls in power-dressing short skirts; Business Solutions was thousands of men in suits being smiled at by girls in power-dressing short skirts.

The PC made a better showing at CES than it did at Business Solutions. There was some new software, but not a lot, and some new hardware, but not a lot. But the key to it was that the business show was stolen by the new NeXT machines.

This isn't the place to talk about them, but if you haven't seen one yet, go out of your way – miles out of your way – to find one and have a look. Your drab old 486 with Super VGA monitor will never look the same again.

COMING OF AGE

CES really saw the PC games market come of age. A rough count showed more PCs in evidence than STs, but that was partly to do with the fact that it's easy to 'cheat' with a PC game – if the programmers couldn't make it go fast enough, bung a few more megahertz into the machine you demo it on and you're away.

Most games seem to be getting a PC version these days, not just the American titles which have been imported. And, best of all, the PC seems to be the machine of preference for programmers of strategy games of the *Populous/Sim City* vein.

Star of the show PC-wise was Virgin's *Wonderland*. This is an adventure game which uses multiple windows in a mouse-driven environment. For instance one window contains text; a description of what you see and a prompt for the parser to type in "Go north" or what have you. Another window contained a map of the places you have been; retracing your steps is a mouse-click away. More windows show your inventory and the objects around you. But most impressive is the graphics window which shows you the scene in VGA resolution.

If this sounds like just another adventure then seek out a copy and see for yourself – it is a different kind of game altogether.

SMALL AND FURRY

Back to last week's business show and the two stand-out PCs were Commodore's C286-LT and Panasonic's CF-270. Both have similar specifications; a 286 processor, 20Mb hard disk, 3.5-inch floppy and a VGA screen in a box small and light enough to hold in your hand without a handle.

Looking more closely reveals a few differences however. For a start the Panasonic has a Fluorescent Triple Supertwist Nematic LCD, while the Commodore has only a Supertwist Nematic LCD. The upshot of which is that the Commodore has a good blue display and the Panasonic has a superb white one.

Similarly, with processor speed the Panasonic outguns the Commodore by 4MHz (16 to 12), has 16 grey scales to Commodore's eight and a three hour battery life to the C286-LT's two (upped to a claimed six in Commodore's 'PowerSave' mode).

So the Panasonic has it then. Well, no. It has a truly awful-feeling keyboard for a start and it looks a bit cheap, while the Commodore exudes class from its brush effect case, and let's not forget that the Commodore is £500 cheaper at £1,999.

Both machines are going to be runaway successes; executives will kill for the Panasonic and the Commodore machine will finally get the firm the recognition it deserves in the PC world.

You can find Panasonic on 0344 853942 and Commodore on 0628 770088, and you can will be able to read a head-to-head review of the machine in *Express* soon.

GET SOFT

Software-wise things were quiet, but a

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few things caught my eye.

Legacy is an extremely promising looking Windows 3 word processor, although that seems inadequate as a label. As well as all the normal WP functions, *Legacy* can handle graphics, including rotating and cropping, and has it's own drawing tools. The spec sheet fills three pages of A4 – you get the idea.

It looks impressive and as soon as I get a copy in my hands I'll let you know more. If you are impatient you can find the publisher, NBI, on 0753 74118. The price is around £450, but there are huge discounts available for the next few weeks.

Another Windows 3 product looks even more interesting. *PagePlus* is a powerful page layout program supporting full typographic controls, style sheets and the pasteboard so beloved of *PageMaker* users. It contains a unique method of controlling type; when you highlight text you can use an 'attribute controller' to directly alter the text with the mouse. For instance, you can select text size, and sliding a scrollbar affair up and down resizes the text on the screen as you drag. This could produce horrendous results in the hands of a lazy typographer, but it certainly makes layout easy.

But I haven't mentioned the best bit about *PagePlus*; it costs £99. No, I haven't missed a digit out. The publisher hopes that everyone who uses Windows will buy it and treat it as an accessory like *Write* or *Paintbrush*.

I have a copy of *PagePlus* and we'll be running a review ASAP. If you can't wait phone the publisher, Serif, on 0602 701022.

BEST OF BOTH WORLDS

Quarterdeck had a product on show which isn't actually available yet, but which could turn out to be the most important thing there. Called *Desqview-X* it is identical to the *Desqview* multi-tasking system, except that it can run DOS and Unix windows at the same time.

It appears to work just fine. Running on an Amstrad laptop it had no trouble running two DOS windows with two Unix X-Windows demos simultaneously. Even when I persuaded one of the DOS windows to crash, the Unix ones kept on going as if nothing had happened.

When this product is ready to ship, Quarterdeck will have a monster on its hands.

Unix addicts can whimper gently down the phone about release dates on 353-1-841444 – that's an Irish number.

Stuart Anderton

Spectrum

CHRISTMAS AGAIN

If you wanted all the big driving games last Christmas, but found your lovable relatives went for presents of a more socky/underpanty/Hai Karate aftershavey nature, Domark has put together a compilation of the four major fast car titles that had the tills ringing festively.

Wheels Of Fire comprises the following: *Chase HQ*, the superb car-chase game where you have to bump the criminal's flash sports cars off the road; *Turbo Outrun*, a so-so update of boy racers fave arcade game; *Power Drift*, an exciting jiggling cabinet arcade game that demanded much of the Speccy and didn't turn out too bad; and finally, Domark's very own *Hard Driving*, the realistic car simulator that was soon christened 'Very Hard Indeed Driving' by all who played it. The price is £15.99, and that seems pretty reasonable for four games that cost a tenner each less than a year ago. Buy it instead of getting one of those absolutely side splittingly funny car stickers for your Allegro.

NOSTALGIC OLD GIT

Call me a nostalgic old git if you want but there are some excellent games of yesteryear currently re-released at a super bargain budget price that you simply must get. First off, and particularly essential, is the Speccy version of that film they show at Christmas nearly as much as *The Great Escape*, *Star Wars*. It's a very respectable conversion of the sit-in-wire-frame arcade classic, although unfortunately on the Speccy the sound effects are sadly subdued. It brought a hazy tear of nostalgia to my eye I can tell you.

Also out now for £2.99 and well worth bagging up is *Rastan*, another arcade conversion, this time of a sword and sorcery slasher epic. You control the suitably hunky barbarian with the furry Y fronts and unlikely name and take on the usual monsters in a compelling scrolling platform-type game. Both titles are on Ocean's 'Hit Squad' label and are well worth keeping a shelfwards eye out for.

ADVENTUROUS

Maybe it's just me but the adventure scene seems to have gone into a bit of a decline recently with everybody deserting the traditional 'Go north', 'Rub magic knob' type adventures in favour of clever-trousers role playing affairs with graphical interfaces and other such rubbish.

Which is why it's good to hear about the formation of The Adventure Club. This is an organisation for Speccy owners who like playing and writing adventures. The plan is for members of the club to send in adventures they've written with PAW, GAC, The Quill or whatever. These can then be made available to everyone else at pretty cheap prices. According to the founder, PT Cimatti, authors will get a royalty on any games sold to members and non

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members alike. So maybe it's time you dug out that unfinished mega-adventure that will surely change the face of adventure game playing as we know it, or failing that, give someone ooh, several seconds of fun at the very least.

As a special offer to *Express* readers, reduced membership fee of £2.50 (which includes your first adventure) is available.

The address is The Adventure Club, 14 Brooks St, Llandudno, Gwynedd, LL30 2TT.

PLAY IT AGAIN SAM

Despite all its problems the SAM Coupé is still generating loads of mail and interest, and I couldn't resist quickly squeezing in this cheat for the rather nice looking *Defenders of the Earth*. On the high-score table type "....ORB" and the wonderful benefit of infinite energy will be yours. Although your clogs still get popped if you fall in the water.

By the way, please let me know either way if you'd like to see the SAM covered in this column from time to time.

OPEN HOUSE

Speccy related stuff of every kind is always welcome, so if you've got any comment on Amstrad's absolutely ridiculous and completely stupid decision to stop production of the Plus 3, press releases, tips, pokes, fanzines, user group info or lots of lovely software for review send it to Robin Alway, Spectrum Column, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW. I look forward to receiving your bulging jiffy bag!

MIKTOR

Here's the part of the column that's been annexed to a certain person in Faversham, Kent called M Harris or Miktor. Yet again he's managed to come up with hacks for games I haven't even heard of, and as usual we're all eternally grateful.

To get either working type out the appropriate listing, Save it for future use if you want to, Run the thing and start your game tape from the beginning. Thanks again to Miktor.

Robin Alway

```
10 REM OPERATION HANOI (48+128)
20 BORDER 0: PAPER 0: CLEAR 25999
30 LOAD "" CODE: POKE 26113,33: POKE 26116,175
40 FOR N=26117 TO 9E9: READ A: IF A<256 THEN POKE N,A: NEXT N
50 RANDOMIZE USR 26000
60 DATA 50,191,112: REM LIVES
70 DATA 50,208,130: REM TNT
80 DATA 50,149,206: REM AMMO
90 DATA 233,999: REM END MARKER

10 REM DEADLY EVIL (48+128) ENERGY
20 CLEAR 3E4: LOAD "" CODE : POKE 65247,135
30 FOR N=64824 TO 64830: READ A: POKE N,A: NEXT N
40 RANDOMIZE USR 65025
50 DATA 175,50,214,204,195,56,189
```

• Those pokes in full.

ST

AN COOL BARES ALL

Whatever you use your ST for – games, graphics, education, "serious" work – if you've never mucked around with its musical abilities, you've been missing out.

You're probably already aware that the ST has such a lot of musical software available for it because years ago old Mr Tramiel (bless 'im) had the excellent good sense to include MIDI in and out ports on his new 16-bit computer.

But you may not fully realise that you don't need banks and banks of expensive MIDI keyboard and synthesiser equipment to start making some pretty impressive sounds.

MPH's £39.95 *TCB Tracker*, written by "AN Cool," aka Anders Nilsson of the Carebears demo team, is one such piece of software (orders on 0603 503382; there's also a demo version for just £2.30). First released at the Earls Court Computer Entertainment Show (the bruises are healing up nicely, thanks), it's been very well received and looks set to become an instant ST classic.

HOLY BAT MUSIC

But *Tracker* isn't having things all its own way. For another piece of software has been released at a similar price from French games house Ubisoft. Called *Music Master*, it aims to appeal to absolute beginners, offering the opportunity to create music and sound effects using a beautifully simple and bright graphic interface (ie pictures instead of words).

You can create sound waves with the mouse, setting sound parameters or allowing them to be generated randomly, and there are all sort of other features, such as an equalizer, filters, tuning delay, reverberations and so on. And, needless to say, you can save your doodlings and load them up again later for more treatment.

You can, of course, work with a MIDI keyboard or synthesiser, but I suspect *Music Master's* real appeal will be for those who just want to use their ST keyboard.

A little techie stuff and some numbers to keep the anoraks happy: ten voices of music at 15KHz with 8-bits per voice of resolution; 100 per cent machine-code (therefore fast and compact); and up to 60 per cent sound compression for more efficient disk storage.

There is however, one teeny weeny problemette. To get access to the maximum of 16 voices offered with *Music Master* you need something Ubisoft calls a BAT MV-16 interface card and headset. Oh poo, I hear you exclaim, just when I was getting all worked up.

Well, not really. Because the

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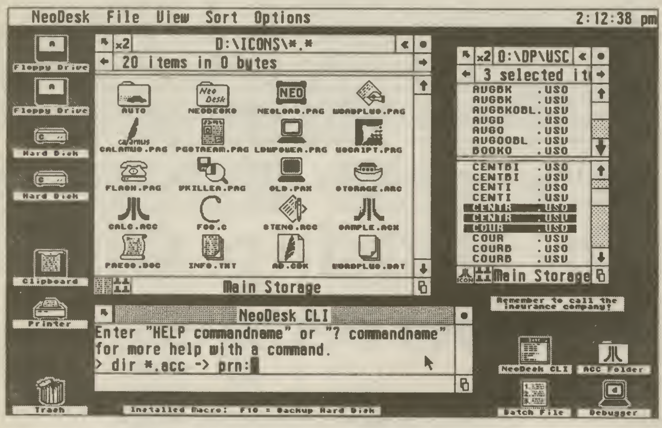

```
NeoDesk CLI
Enter "HELP commandname" or "? commandname"
for more help with a command.
> dir *.acc -> prn:
```

```
AVGBK    .USO
AVGBK    .USV
AVGBKOBL.USV
AVGD     .USO
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CENTR    .USO
CENTR    .USV
COUR     .USO
COUR     .USV
COURB    .USO
COURB    .USV
```

• *A slightly different look to the Desktop with* **Neodesk.**

card – which comes with Ubisoft's *BAT* game – comes with *Music Master* for a grand total of £40. (For those who already own *BAT*, and therefore the MV-16, the price is about a tenner cheaper.)

Music Master is available even as you read this from any shop that stocks a range of ST software a bit wider than titles beginning in "advanced" and ending in "simulator."

A NEW SET OF PINS

How much do you reckon a new 24-pin colour printer would set you back? Would you believe £369? Star Micronics has just brought out the LC24-200, challenging any other printer manufacturer to offer a printer with these features for a similar price.

Actually this is just one of three new machines from Star. The mono version of the LC24-200 is £60 less than the colour, while the nine-pin version of the same range is a mere £259.

Star Micronics is on 0494 471111.

DESKTOP SOLUTION I

If I were really pushed to admit that there is one thing about my ST I am less than crazy about, I'd have to confess that the desktop could be better, and that now, five years after the ST's first appearance and after several improved versions, it still has the capacity to make me livid with frustration and rage (not a pretty sight, I assure you).

How much is it worth to replace? Well, I'd say, about £39.95. Which, funnily enough (or not), is exactly the price of *NeoDesk 3*, a graphically- and dropdown menu-based, feature-packed piece of software that complete'y transforms the standard set-up. If you use it just once, I'll hazard that you will never be able to do without it again.

With it you can access programs, files and folders directly; store files and folders in a temporary clipboard while you reorganise your floppies or hard drive; write important notes directly onto the desktop; retrieve files from the trashcan if you suddenly discover that wasn't the old version after all; automate any series of desktop operations such as opening windows, copying or deleting files; design personalised icons using the icon editor and drawing tools; and even import *Degas* or *Neochrome* pictures for use as backdrops.

You can also do away with the ST's unbelievably stupid inter-disk file copying with a smart copying facility that requires just one read of the source disk (and automatically detects the format of the original disk and formats the destination disk to match it).

• *This desk ain't big enough for both of us.. the Gasteiner Track Ball.*

NeoDesk 3 costs £39.95 from Electric Distribution on 0480 496666.

DESKTOP SOLUTION II

Desk too small? About to fork out hundreds of pounds on a bigger one? Stop! Gasteiner has launched a £39.95 track ball controller that solves those "no room" blues. It's basically a mouse with the ball on top, so instead of you having to make ridiculous combing movements across that eight inches of formica you call your workstation, you roll the ball around under your fingers.

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Thus might we imagine one of the Action 16 team, currently shifting serious amounts of ST software at ridiculous prices. But no, for Action 16 is in fact a branch of none other than Digital Integration, more commonly known for its incredibly detailed flight sims, ones I have never yet failed to crash in.

Latest trio is the shoot-'em-ups *Backlash* and *Eliminator* and *Impact*, each of which were fairly well received on first, full-price release, and each of which will now set you back just a fiver from your friendly neighbourhood software shop.

Steve Carey

THEY THINK IT'S ALL OVER
but not until you've read Whole Wired World on page 36

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1992 The Official Journal of the European Communities Volume 33

Council Directive of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment

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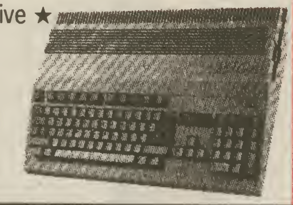

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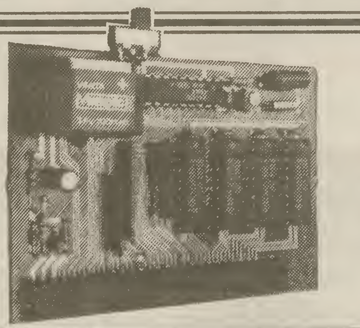

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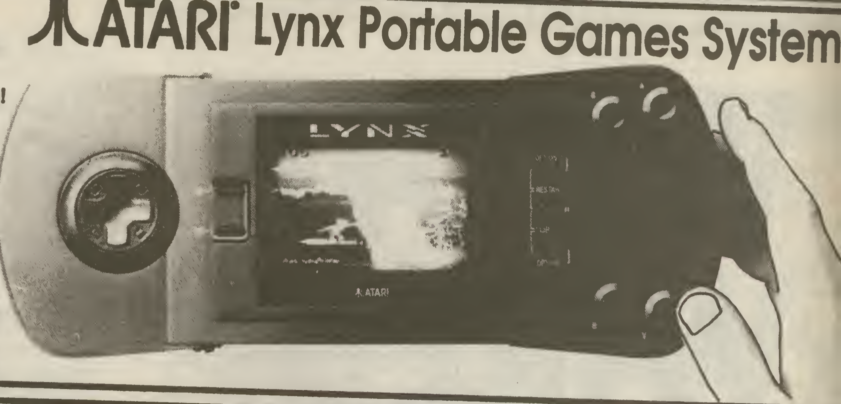

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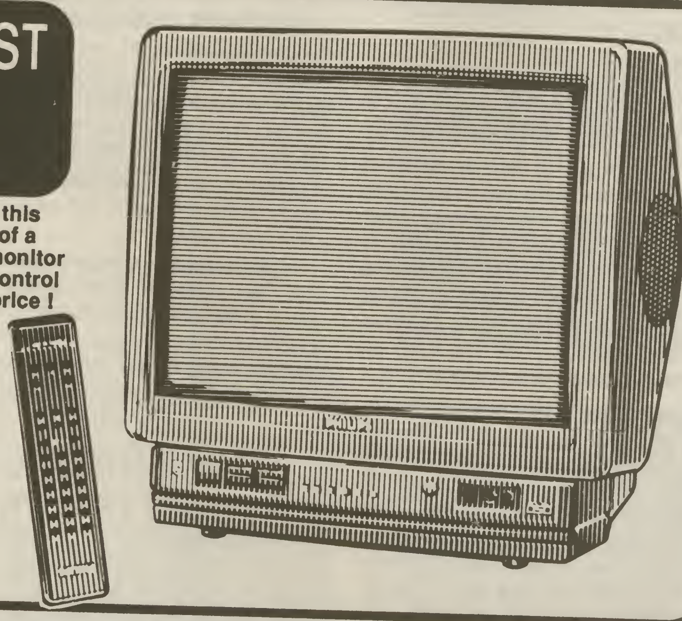

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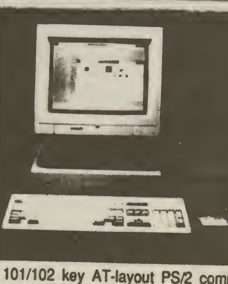

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PCS 286

- ◆ Intel 80286 microprocessor 12MHz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
- ◆ 3 Full size expansion slots; 1 x 8bit and 2 x 16bit (XT/AT style).

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PCS 286 2Mb RAM Upgrade Kit	£119.00
PCS 286 4Mb RAM Upgrade Kit	£235.00

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CODEHEAD RELEASES CODEKEYS

Codehead Software of Los Angeles has released *Codekeys,* a nifty macro key designer for the Atari ST. Macros are sequences of key presses and mouse actions which can be played back by simply pressing a key or combination of keys.

Although there are other macro packages around for the ST, Codehead claims that *Codekeys* is the best, owing to its relative simplicity - it consists of an auto-folder program and an accessory.

As a result, the $39.95 product can be invoked, for recording or playback, from almost anywhere within GEM or TOS, on the ST or TT in all screen resolutions or modes. Full word processing facilities (cut, paste, edit etc) are available for macro strings, along with a host of other features. Codehead charges $5 for postage to the UK and accepts major credit cards.

Contact: Codehead Software, PO Box 74090, LA, CA 90004, USA. Tel: 0101 213 386 5735. Fax 0101 213 5789.

EDHAK UNVEILED

Need a pop-up (TSR) text-editor for your Atari ST? Keep an eye out for *Edhak* version 2, a shareware package that provides many of the features of Bordland's *Sidekick* for the PC, but for the Atari ST environment.

The package costs $12 to register from author Craig Harvey, and slips neatly into 77K of system memory when using the default 10K text editor buffer.

The latest version of *Edhak* is a great improvement on earlier versions and is getting some rave comments on the US on-line systems. The package can be downloaded from Compuserve and Genie's Atari ST areas, as well as from Craig's BBS, Clear Thinking, in the US. You can register and obtain a copy for just $12 by mail.

Contact Craig Harvey, PO Box 715, Ann Arbor, MI 48105 USA.

Email: Compuserve - 73047, 600. Internet: 73047, 600 @ Compuserve.com.

BBS: 0101 313 761 2444.

APPLE PUTS HOLD ON SYSTEM 7

It's all go over at Apple in preparation for the new Macs announcement this coming October 15. Apple executives have placed a hold on shipment of the System 7 software until the spring of next year (V6.0.6 will ship with the new Macs, say insiders) but, as compensation, *Hypercard 2* will ship at last this November.

Why the delay on System 7? Squeezing the software down to below the 2Mb mark on the Mac is causing problems, according to messages posted on the Mac user area of the American PeopleLink service in the US.

The good news about *HyperCard 2* is tempered by the fact that the version to come bundled with the Mac from this November onwards will be a run-time version only. Previous versions of *HyperCard* included the development programs - now the development modules to version 2 will be sold by Claris, which will handle *HyperCard* from now on.

IBM/MICROSOFT SHUFFLE

IBM and Microsoft are reported to be shuffling their arrangements regarding OS/2. Officially, both companies have announced the extension of their software licensing agreement.

Insiders report that IBM is less than pleased at the sales success of Windows 3 and, as a result, has changed the way both companies work with OS/2. IBM will handle most development work on OS/2, leaving Microsoft to be responsible for Windows and DOS development.

The good news is that a new version of OS/2 - version 1.3? - is in the offing. This will be capable of being ported to other environments such as Motorola microprocessor-based and Unix systems.

Version 1.3 of OS/2 is reported to need just 2Mb of RAM and be faster than earlier versions. If so, that perhaps explains why IBM is shouldering responsibility for *OS/2* development - Microsoft would hardly need a competitor to Windows 3 would it?

TEXAS GETS HEAVY

Texas Instruments has given notice to Japanese semi conductor manufacturers that it wants a ten per cent royalty on DRAM chip sales. The announcement stems from last year when TI succeeded in its 30-year attempt to get a Japanese patent on the DRAM chip. If the Japanese companies shell out, TI could rake in more than $100 million a year in royalties.

But don't expect the Japs to give up without a fight. Some companies claim that a 10 per cent royalty figure is five times the market norm.

SHAREWARE GETS ROLLING

Computer Publications of Arvada in Colorado has got the first edition of its *Shareware Connection* newsletter out of the door.The $14 a year monthly newsletter aims to keep the Atari ST community up to date on what's happening on the shareware and public domain software front.

Unlike some of the smaller competition, the newsletter also supplies copies of the programs it reviews. A subscription to the newsletter with the disk service costs $28 for six months, or $48 for a year. That's not bad value at all.

Contact: The Shareware Connection, Computer Publications Unlimited, PO Box 2224, Arvada, Colorado 80001-2224, United States. Tel: 0101-301-423-6805.

ROW AMONG THE 'ATARI ELITE'

A user group known as the Atari Elite, which runs various user groups and the like, and which has been criticised for allegedly promoting software piracy through its software rental schemes, has issued a solicitor's letter to more than 30 people, publishers and companies in the US Atari ST community, threatening legal action for libel.

The Atari Elite is a Pittsburgh, Pennsylvania, Atari club that was named in numbers of allegations of piracy related activity affecting the Pace Atari show, held in April of this year.

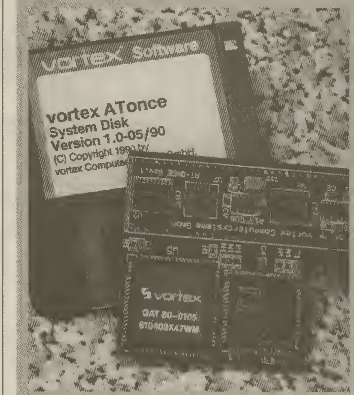
According to Ron Kovacs' Z-Net on-line newsletter, the show had the lowest attendance of any nationally promoted Atari show to date, and many observers attributed both the failure of the show, and what appeared to them to be widespread open piracy, to the Elite group.

Following the show, many on-line newsletters published reports on the matter. It now seems that the Atari Elite has hit back, asking for a public apology for the comments, or even taking legal action.

Although legal skirmishes like this go on all the time in the US computer industry, this one could be serious for the US Atari ST community, as Z-Net reports that Atari is considering cancelling attendance at future Atari-specific computer shows, so as to avoid getting itself and its officers involved in any wrangles with the Atari Elite and other user groups.

Let's hope that Atari US does not take this step, as it will be a sad day for the ST user community if it does. ■

PC EMULATOR FROM VORTEX



Vortex Computer Systems of Flein bei Heilbronn in West Germany has released AT Once, a bolt-on PCB that turns an Atari ST or Mega ST into an AT compatible with a clock speed of 8MHz. The card consists of a surface mounted 80286 microprocessor and Vortex's custom back-up circuitry.

When run on a 1Mb ST, the ATOnce card gives up to 704K of DOS-accessible Ram. On STs with more than 1Mb of RAM, the package allocates the extra memory as either extended or expanded.

Up to 24 GEM/DOS-accessible disk partitions are supported by the Vortex software, which is supplied on disk. DOS can be booted straight from disk, by-passing the ST boot-up cycle completely if required.

To install the card you have to solder a socket on top of the ST's 68000 microprocessor. On the 1040 STE and Mega ST series, a plug-in adapter can be used instead. The entire system costs DM498 for the card and software, plus between DM 98 and 128 for the plug-in adapter if required.

Contact: Vortex Computer Systems, 51-53 Falterstrasse, D-7101 Flein bei Heilbronn, West Germany,Tel: 01049-7131-50880

You can get ATOnce in this country from Full Circle Technologies on 0622 077173 for £179. The firm also offers a 14-day trial period.

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The Tipster

This **HORSE RACING** software was used to select the 100/1 NORTONS COIN outsider in this years GOLD CUP. Data for this program requires the **RACING POST**. An **INTERNATIONAL** version is available for **AMIGA** & **ATARI** computers using the **DAILY MIRROR** for data on UK races.

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This **GREYHOUND RACING** program is available on the **AMIGA** and **ATARI ST.** Using data from either the **DAILY MIRROR** or **RACING POST**, you can rate races over **HURDLES** and the **FLAT**. Very easy to use, this program will rate 5 races in under 1/2 an hour.

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SSA
DEVELOPING A FUTURE

OPENING TIME

Some of you, my staunch, upstanding and erudite readers, will have noticed that the centrefold has not actually been in the centre of the magazine since its conception. There is a reason for this. It is a simple reason which holds a dark secret.

I don't want Unix users to find it. As you will know, users of the Unix operating system are deeply logical people, if they read that a section of a magazine is to be called 'The Centrefold', they will turn to that area of the magazine. Logic then demands that if the section isn't where its name suggests it has never existed, and they don't bother looking any further.

So far, this strategy seems to have worked well as I have received no correspondence beginning, "Sir, I am a long time Unix user... ".

The dark secret behind this is that my beloved springer spaniel, Capablanca, is being held hostage by the OS/2 Hard Club of Europe. If any Unix-based letters are printed in The Centrefold, Capa' will be de-capa and his tail used as an ear adornment. I am desolate and hope to hell that the rest of my pets are safe from such violent organisations as 'Hell's Angels for CP/M', 'the MS-DOS Mafia', 'TOS Terrorists for a Free Desktop', or even 'Amiga DOS Animals'.

I hope that you will bear with me and not let the secret out to any Unix users.

This week's Centrefold is not only not in the middle, it isn't even two pages long. That's because, as you may have noticed, we are now 100. The century is up. So to celebrate we present some of the highlights of the last two years (that is, the first two years) of *Express* stories.

Cheers, now get out of this column and take your dirty boots with you.

THE TOP 100!

It's Issue 100 and that calls for a little nostalgia. So here we have a very Centrefold choice of the best of *Express*. What you will find in these two pages are bits and bobs from the wierd side of computing life since 1988. Due to lack of space some issues have had to be left out. What's your favourite *Express* story?

8 page sampler Sept 1988
New Sinclair PC unveiled.

Nintendo admits that games consoles cannot compete with the likes of the ST and Amiga.

First issue free with *ACE* Dec 1988
"For discerning Amiga and PC owners everywhere (sorry ST owners, your computer couldn't handle the graphics!)
Advert from Martech for *Phantom Fighter*.

ISSUE 1 NOV 12 1988
Amstrad PC2000s appear in this country. From £749 to £1,249,

"Konix could easily be the next Amstrad, I honestly believe that. What's more, they'll be bigger and better than Amstrad." Bruce Everiss then of Codemasters.

"You want my view on the future of the market? You ain't having **** all. I know **** all about the market and there's no way **** way I'd tell you." An unnamed Amstrad senior bod.

ISSUE 2 NOV 19 1988
"You can run Vic 20 games on the C64. You can use any Commodore games as long as they're lower than 64...." Lasky salesperson.

ISSUE 4 DEC 3 1988
The Sega Megadrive previewed in Japan. Due out Sept 1989, £200.

Atari engineers given the task of completing the £700 Stacey laptop.

Headlines we have lived....
number 1
"KIDS ADDICTED TO NAZI HORROR GAMES"

ISSUE 5 DEC 10 1988
"AMSTRAD BLAMED FOR PC200 CHAOS" "High-street chain Comet has accused Amstrad of a "cock-up" after supplies of the new Sinclair PC200 turned up at stores without manuals and essential software."

COMPUTER EXPRESS
SINCLAIR PC 200 FIASCO
UNIX?
PUBLISH ON YOUR MICRO!
R-TYPE
Pixel Picasso!

"FOUR MODE COUPE UNVEILED BY MGT .... exclusively released to *Express*. The machine, called the Coupe costs £149.95."

Headlines we have lived...
number 2
"Wot's this eunuchs, then?" headline to Unix feature.

ISSUE 6 DEC 17 1988
Sagesoft rapped over their sexist ad "If she understands this headline, she'll understand our new network."

The *Express* Christmas comp offered £2,500 worth of prizes.

ISSUE 7&8 DEC22-JAN4
OUTRAGE OVER COMPUTER VIOLENCE CLAIM "Electronic games make kids aggressive"- psychiatrist. Nintendo contest claim.

The first Amiga games bundle has ten games worth £230. The Tenstar pack includes *Barbarian, Terrorpods, Wizball, Buggy Boy, Art of Chess, Photon Paint.*

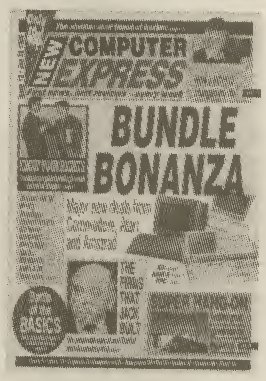
ISSUE 10 JAN 14 1989
North Polar Expedition was the first interactive videodisc to be released by Virgin. Runs on the BBC Domesday laser disk system. You follow in the footsteps of Sir Ranulph Fiennes. £199.

"In about a hundred years' time it will become apparent that games programmers are the chimney sweeps of our generation." Mike Scialom on the plight of the underpaid computer whizz-kids.

ISSUE 11 JAN 21 1989
The word 'software' is banned in France.

ISSUE 12 JAN 28 1989
Matsushita develop a computer which can hear a sentence in Japanese and then speak it in English.

US Gold ad slammed as offensive. Two guys standing in front of hoarding showing young lady in bikini bottom and showing boob and holding a copy of *Psycho Pigs UXB*. Two guys standing in front of it saying "I know which one I'd rather play with","Yes, but have you seen the reviews for *Psycho Pigs UXB*?"


COMPUTER EXPRESS
BUNDLE BONANZA
Major new deals from Commodore, Atari and Amstrad
THE FIRMS THAT JACK BUILT
SUPER HANG-ON
BASICS

ISSUE 13 FEB 4 1989
KONIX STUNNER
Revolutionary system brings arcades to your homes.

"What we have seen from Konix is one the most exciting hardware developments for some time." Geoff Brown US Gold boss.

ISSUE 14 FEB 11 1989
"Invisible computer revealed!" Bell labs in the US "have created a stable form of matter sized to give it unique properties", " The dream of invisible computers though won't become reality for at least 30 years."

ISSUE 16 JAN 21 1989]
"Bonkers games programmer Colin Dooley is so attached to his 'computer handle' that he's changed his name to it. " The Gremlin progger changed his name to Fungus the Bogeyman by deed poll. "Bogeyman has worked for Gremlin for three years."

ISSUE 17 MAR 4 1989
Gremlin recalls *FOFT* which is bugged to hell.

Beatle Apple goes into litigations with computer Apple.

ISSUE 18 MAR 11 1989
Headlines we have lived...
number 3
"HACKERS SELL WESTERN SECRETS TO SOVIETS"

ISSUE 19 MAR 18 1989
"If it comes to a shoot out we'll do fine. We're good cowboys." MicroSoft's techno billionaire Bill Gates on facing up to the competition.

ISSUE 20 MAR 25 1989
A breakfast cereal called the Nintendo Breakfast System is launched in the US. Fruit flavoured wheat puffs shaped like characters such as the Super Mario Brothers.

Headlines we have lived...
number 4
KILLER COMPUTER SHOCK
"A computer has been ordered to stand trial in the Soviet Union - for murder."

The Megadrive arrives as grey import.

"*Hollywood Poker* contains a zoom-in feature - because German's are pervies." Howard Newmark of US Action doing a Ridley.

ISSUE 21 APR 1 1989
First issue of *New Computer Excess* includes the following:YET ANOTHER RUDDY BUNDLE... Amiga to be bundled with ST shock!

ISSUE 22 APR 8 1989
Headlines we have ➤

THE TOP 100 ***cont.***

lived... number 6
CYBER WITH ROSIE.

WH Smiths bans the Codemaster's *A Rock Star Ate my Hamster* or at least the copy of *The Stun* for being in bad taste. *Express* gave it two stars and made millions from a band made up of Morrissey, Lemmy and Salt 'n' Peppa.

ISSUE 23 APRIL 23 1989
The NEXT machine went on sale in the US. To schools for $6,495. To the public $9,995.

ISSUE 24 APR 22 1989
The Gameboy is announced. "It is currently being put together in Japan."

Martech closes down.

ISSUE 25 APRIL 29 1989
Headlines we have lived... number 7
"HOW I LOST £37 MILLION IN A DAY... Sugar's bad day at the office"

ISSUE 28 20 MAY 1989
Headlines we have lived... number 8
"UK HACKERS RUN KGB SPY SCHOOL"

Intifada , the game which turns you into an Israeli soldier battering your way around the West Bank, hits the planet.

ISSUE 29 27 MAY 1989
HUMAN COMPUTERS FOR THE 21st CENTURY
Report claims neurocomputers will take over.

Ken Mosely appears in *Express*.

ISSUE 30 3 JUNE 1989
Headlines we have lived... number 9
"SPIES ADDICTED TO UK COMPUTER SHOWS"

ISSUE 31 10 JUNE 1989
News of the Lynx is broken in *Express*

ISSUE 32 17 JUNE 1989
"Doctors can now plant radioactive capsules inside a person's head which eat away fatal brain tumours - thanks to computer technology" *Express* .

ISSUE 33 24 JUNE 1989
"The Iron Curtain of Churchill's day is the Maginot line to the microchip." Ronnie Reagan.

➤

Tim Smith's CENT

Write to 30 Monmouth Street, Bath BA1 2BW

I WISH I'D SAID THAT

Have you read or heard anything computer-related which made you fall about with mirth? If so, send it to 'I Wish I'd Said That' at the usual address.

"Can I go home yet?" Parent overheard talking to son at the CES games show.

"Then the system will offer you choices of other exhibit(*sic*) related to prehistoric monsters. They might even have a skeleton of an Ocic (*sic*) somewhere." *Express* (97). Er... read page 19 of that issue Mr Rawcliffe and you'll see that you misread Oric and exhibit.

" But he also boasts two other assets... His ears. In fact within the personal computer industry they are virtually unique. He uses them to design new products." Dell advert.

Letter Spray

Want to see your name in print? Then write to Centrefold. This week's replies by a piece of turf walked on by St Paul Parker.

Sir, Being a proud (surprisingly so yes!) owner of the much put down PC2086 (yes the Amstrad one with the *Star Trek* styling) a problem has recently come to light – I can't afford any software. Thus picking up *Express* with my last pint, I decided that I would try to leech some hardware/software/cash/thank you notes from the notoriously generous people at *Express*.
D Quinlan, Co Wicklow, Ireland.

Dear D, I had to cut your begging letter for two reason: firstly, it was a little too long, and secondly, I am a vindictive sort. Your affrontery appealed to me no end. However, I have decided to send you a copy of A Question of Sport. *It's a darling little game and should keep you happy for minutes.*

Sir, Hello carbuncle face, I have a few points to put to you so here they are. Easily numbered for reference.
1) My computer is better than yours. More specifically my Amiga is better than anyone elses Amiga.
2) Every member of the *Express* staff have(sic) small willies, and any female member is a right ugly cow.
3) Expletive deleted.
4) Alec Glucose is an itchy bum on the anatomy of the one-handed world hanging from a celestial cliff.

I think I have put across my views on the computer front most admirably. I may have broken some of your rules (*all of them actually, and in order*). I own an Amiga. Goodbye mortal. We will not meet again. Not that we ever met but it's metaphorically speaking you understand, and purely from a sub-existential point of view.
Yours forever, Tree.

Dear Tree, Because you have an Amiga, appalling handwriting, no grasp of the English language, sound like a jumped-up hippy, and think that you're a tree, I have decided to send you a copy of the superbly wafflesome Alan Sugar – The Amstrad Story. *Never write again because I will be forced to sell my Amiga 3000 out of embarrassment.*

WINNERS GALORE!

THE MAN WHO WON £100

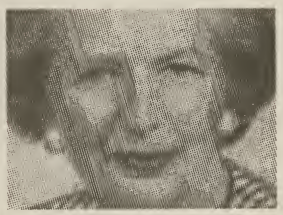
Yes, here he is, the man who was first out of the hat with Express' Reader Ads draw. Mr P L Allum is pictured here, as he says on his photo "In the middle". After training for many years in the European Being Drawn First Out of the Hat sprints, Mr Allum finally cracked it. Congratulations. For those unlucky millions who didn't make it, write in and tell us whether you think we should repeat the competition.

WINNERS WINNERS WINNERS
Rightey-ho my trusty 'folders' let's have some winners then. We will kick off with the old man standing by the shop caption competition from issue 98. And the winner is:

- Paul Trainer of Leeds. Paul snuck in with a true caption, not merely a speech bubble. His winning entry was: "Man seen rising after pleading with Tandy to take his name off their mailing list."
- Mr Bryan Kennerley of Rhyl gets an honouary mention for: "Shit, my back's gone!". I'm not sure what the honour is though.
- Mr L Samaraweera of Harrow wins the digital thermometer for correctly guessing that the symbol for the Hitchhiker's Guide was a rubber duck.
- David Plater of Bridport wins the blank disks from the 'Von Trapp children' competition, and when he writes to tell me what format he needs I'll think about sending them to him.

By the way you're all vile. That picture of the Von Trapps was horribly sexist so none of you wins the mystery prize for telling me so.

Thanks to Leo Manifold for his attempt. Write again and I might just give you a prize.



READER'S CHART

This week in the Bleeding Charts Club we have a special guest star giving her fave pieces of software. Yes, she's from beyond the grave and she's Queen Elizabeth I. Her prize, Britain's undying gratitude, goes to Lizzy Reg. So, here we go.

1) Er... what is a computer?
2) And software, what's that all about then?
3) Shoot-'em-ups, is that like the Armada or what?
4) Chips, do me a favour, we've only just discovered potatoes.
5) Now I get the idea, how about Pong?
6) No, I don't know then, have you got a fag?
7) Alright, alright, ummmm, *Leisure Suit Lizzy*?
8) Wrong again? I'll have anything from Palace.
9) Got any good head-chopping games have you?
10)Nah, well I'm off then.

Thanks to Corin Price of Aberdeen for her medium work on this.

THE TOSH TEN

Yet again, it's the Tosh Ten. Send your rubbishy computer-related items to the usual address and win an all expenses paid to... no seriously, win a prize. This week it's 10 computer games for the caring 1990s:

1) *Rick Pleasant*
2) *Space Respectors*
3) *Robosocialworker III*
4) *Shadow Cowards*
5) *Farm Yardage*
6) *Teenage Mutual Knitter Turtles*
7) *Operation Dolphin*
8) *F19 Flying Doctor*
9) *Human Healing Machine*
10) *Defenders of the Environment*

TREFOLD

Tale Spin: Stories from the other side

This is the section which allows you to invent computer folklore, legends and lies.

PROSE BY ANY OTHER NAME
This masterful piece of prose was created on a DEC 11/70. This machine was programmed by Gilbert Bohuslav. Old Gillers stuffed DEC with various words from western movies, a little bit of syntax and a drop of grammar. William Gibson eat your virtual heart out:

Tex Doe, the marshall of Harry City, rode into town. He sat hungrily in the saddle, ready for trouble. He knew his sexy enemy, Alphonse the Kid, was in town.

The Kid was in love with Texas Horse Marion. Suddenly the Kid came out of the up-ended Nugget Saloon. "Draw Tex!," he yelled madly. Tex reached for this girl, but before he could get out it out of his car the Kid fired, hitting Tex in the elephant and the tundra.

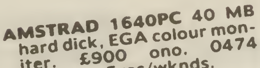
As Tex fell, he pulled out his chess board and shot the Kid 35 times in the king. The Kid dropped in a pool of whisky. "Aha," Tex said, "I hated to do it but he was on the wrong side of the queen."

Pathos, plot, tears, violence. What more could even Zane Gray want?

EVEN YOUR BEST FRIENDS WON'T TELL YOU
Did you know scientists have isolated the chemical which causes body odour? The reason I mention this is because at least one of the egg-heads concerned used a computer at one time in his (or it could have been her) life. By the way, the pongy devilment goes by the name of 3-methyl-2-hexenoic acid. Tell that to the next sweaty oilrig worker who gets in the queue ahead of you.

THE SINGING ROAD
I have been informed by our technical editor – coaches driven, aircraft flown, nuclear reactors fettled, half-pounders with cheese a speciality – that there is a road in Surrey which makes music. Specifically, when the weather is correct, and the wind is up, the road picks up Radio 1 (or at least it did before Radio 1 changed frequency). The reason, is that a whole load of faulty semi-conductors were dumped into the hard-core.

AD 9 FROM OUTER SPACE
A reader, who's name and address I don't have (bit of a cock-up on the letter-opening front), sent us the following snippet from a free local newspaper.



AMSTRAD 1640PC 40 MB hard dick, EGA colour monitor. £900 ono. 0474 852262. Eves/wknds.

If you were the person who placed the ad or sent us the card, write in and we'll send you a prize. Sounds like money for old rope to me.

FROM THE ARCHIVE

A year's a long time in computers. Can you remember which console giant planned a business system? Who called computers "the devil's tool"? Who slagged Steve Jobs? And who drowned a kitten for publicity? Don't recall? Read on.

THE BUSINESS
It was Nintendo it was. The megally-vastly-biggly-'normous Japanese corp was reported to have plans for a business system. The project was to be a collaboration between the Nints and a finance company called Fidelity Investments. The crux of the notion was a modem which would link users to the NES Network. The interface was said to be a series of Yes/No questions.

DEVIL MAY CARE
The open-minded sounding Christian Exclusive Brethren decided that booze had already been used a hobby horse, as had sex, jazz, motion pictures and even football (banned in the 17th century), so they picked on computers as being the devil's tool. They took tracts from the Book of Revelations to back them up.

They even wanted to rant, sorry chat, with the then education minister, John McGregor, about getting computers out of schools. Where are they now?

JOBS DONE, START OF CHAT
"In terms of public relations yes, Steve [Jobs] is the most successful in the industry. But he does it by saying how crummy everyone else is." A tad bitchy perhaps? This was the comment of ex-Jobs fan Bill Gates, on his old pal the co-founder of Apple.

DROWNING NOT WAVING
Micronet offended fluffy-lovers throughout the country with an ad which proclaimed "If you do not renew your subscription we will drown the kitten in the picture."

The Advertising Standards Authority was said to have received "lots" of complaints. Even the RSPCA were up in paws about it.

Where is the kitty now? We should be told.

TOP 100! *Cont.*

ISSUE 35 8 JULY 1989
"Fastest machine on earth unveiled." Maybe not for the home user, it was the NCube and cost £19m.

Headlines we have lived... number 10
"Arting Around"... a story about the Amiga animation competition.

ISSUE 36 15 JULY 1989
"THE FILTH AND THE FURY"... Headline to a hacking feature.

ISSUE 37 22 JULY 1989
Headline we have loved... number 11
"Nana nana nana nana nana" ... yes, Ocean gets Batman.

ISSUE 38 29 JULY 1989
Amstrad is forced to replace hard drives in all their PC2000s.

"Gallic crooks grab games" A gang of French villains surprised the gendarmes when they hijacked a lorry and nicked thousands of computer games.

ISSUE 39 5 AUGUST 1989
"Er... no I can't comment on this on or off the record. And don't quote me on that." A usually fearsome software industry figure who turned a bit wibbley at the mere mention of Nintendo.

ISSUE 40 12 AUGUST 1989
Headlines we have lived... number 13
"WHY I SPIED FOR THE RUSSIANS. Computer snoop confesses." Hanz Hubner to be exact.

ISSUE 42 26 AUGUST 1989
Headlines we have lived... number 14
"Who needs Michael Fish?" This one was about Dartcom the weather device for the PC.

ISSUE 45 12 SEPTEMBER 1989
Headlines we have lived... number 15
"Rays from outer space crashed my micro". Well sunspots really.

ISSUE 49 14 OCTOBER 1989
"If you do not renew your subscription, we will drown the kitten in the picture." Micronet advert.

ISSUE 51 28 OCTOBER 1989
SPROUTING PROBLEMS
The Belgian Stock Exchange computer crashed. One broker said "International dealers have been ringing up and asking what happened to our Mickey Mouse computer system."

Headlines we have lived... number 16
PROGRAMMERS AREN'T BORING

ISSUE 52 4 NOVEMBER 1989
"We're furious and you can print that." Atari's response to the *Express* exposé of the STE failings.

ISSUE 53 11 NOVEMBER 1989
Headlines we have lived... number 17
"Computer smellchecker" The first microchip hooter is revealed.

And number 18
"Computerised cops find technology too taxing" they prefer true notebooks.

ISSUE 45 12 SEPTEMBER 1989
This week's cover featured the following immortal lines: "FIASCO How this man has helped the hackers" It also featured a picture of Nicholas Ridley.

"We can't have Sooty shooting things. He has to be passive in the game." Roger Hulley of Alternative.

ISSUE 57 9 DECEMBER 1989
Sega had plans to release disk drives, graphics tablets, keyboard and comms add-ons for its consoles.

Headlines we have lived... number 19
"TERRORISTS MAY STRIKE MICROS'

ISSUE 58 16 DECEMBER 1989
The 'my company is better than yours' argument was really rocking, with Atari getting upset at Commodore's marketing claims for the Amiga.

A new chip was developed which could cure its own faults.

ISSUES 59/60 1989
Headlines we have lived... number 20
"Few What A Scorcher" *Their Finest Hour* was released by Lucasfilm.

The AIDs information disk containing a trojan was also in the market. This wins the *Express* prize for the ultimate in vileness .

➤

THE TOP 100! ***Cont.***

ISSUE 61 6 JANUARY 1990
David Levy's attempt to beat Deep Thought at chess failed.

DC Comics were said to be launching *Batman: Digital Justice*. It was to be put together on a Macintosh and feature 3D graphics. The Joker was a virus.

Postman Pat was the budget 8-bit game of the year.

ISSUE 62 13 JANUARY 1990
PC Engine is reviewed as the "World's greatest games machine"

Headlines we have loved ...number 21 "Getting the Willis" Brucey stars in *Die Hard*, did you play it?

ISSUE 64 27 JANUARY 1990
"SOVIET MIND MICRO ON SALE IN STATES","Brain altering device launched on American market". Was this the first sign of Cybernost?

UNIX systems may well be adversely affected on January 1 2000AD. They can only cope with the 20th Century.

ISSUE 65 3 FEBRUARY 1990
Robert T Morris Jnr was the person to be convicted under the American Computer Misuse Act.

The Civil Aviation Authority decided to train pilots using simulators running on Amiga 2000s.

"Computer systems which are deemed to be of prime importance to the nation are to be protected by a new 'Disaster Bill'."

ISSUE 66 10 FEBRUARY 1990
AT&T Bell labs managed to get its corporate nose ahead of the field by developing the first processor to work using light.

The PC AIDs virus saga got a happy twist with the arrest of Joseph Popp in the United States.

Headlines we have lived... number 22 "Bull shift" French company Bull planned to shed 1,200 jobs.

The Tories quibble about hacking.

ISSUE 67 17 FEBRUARY 1990
Headlines we have lived... number 23 "MENTAL OR WHAT?" Mind Machines are with us.

*Headlines we have lived...24 "WINNER OF OUR DISK CONTENT" Billy Shakes goes on disk.

A Reuters journalist sues over repetitive strain injury (RSI).

ISSUE 68 24 FEBRUARY 1990
Plans for the new CPCs are revealed in *Express*.

Rick Dangerous is to be released in simplified form for the dummies.

"Choo choo. At last Thomas the Tank Engine is to appear in a computer game." Choo choo??

ISSUE 71 17 MARCH 1990
Joysticks with no wires, listening PCs, intelligent television sets, and game for the PCW. A packed issue.

ISSUE 72 24 MARCH 1990
RSI sufferers are awarded £100,000 in damages.

"Computer Tipster backs 100-1 Gold Cup winner." Norton's Coin did more for *The Tipster*'s advertising than ITV by winning the big race at Cheltenham.

ISSUE 75 14 APRIL 1990
"COUPÉ BUG FORCES RECALL OF MACHINES." The beginning of the end?

Headlines we have lived... number 25 "COMPUTER WHIPS ROULETTE WHEEL"

ISSUE 76 21 APRIL 1990
Phone phreakers are targetted by *Express*.

The Tiptster backed a donkey at the Grand National.

ISSUE 77 28 APRIL 1990

NEW COMPUTER EXPRESS
BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY
CBM PLANS NEW AMIGA
Under development: top secret high-end Amiga portable page 3
MUSIC FOR YOUR ST

"SEGA'S HANDHELD IN UK NEXT YEAR" An *Express* prediction you can check out soon.

Apricot is sold to Mitsubishi.

A computer is developed which could be a wine bore in years to come.

ISSUE 78 5 MAY 1990
FAST goes 1984 with cartoon ads offering rewards to 'the kids'; "Let's turn the tables on these crooks" translates to "Let's make some dosh."

ISSUE 79 12 MAY 1990
"CONTEST STARTS THE RACE FOR THE HOME ROBOT"

Details of Sega's new colour handheld, the GameGear, are printed.

NEW COMPUTER EXPRESS
BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY
AMIGA
ST
PC
COMICS
ARCHIMEDES
ROBOTS AT HOME: THE RACE IS ON!
Everybody will have one within three years claims World Robot Olympics organiser

ISSUE 80 19 MAY 1990
"Amiga with 16 million colours"

Headlines we have lived... number 26 "Papal Bull... Only weeks after Pope John Paul II warned about making technology an idol, the Vatican has shown faith in its own ability to avoid this idolatry by purchasing a Bull mainframe computer."

ISSUE 81 26 MAY 1990
Headlines we have loved... number 27 "Chip talks like Kylie and Jase" A chip is developed which allows computers to talk with Aussie accents.

Express fave *PGA Tour Golf* is released by Electronic Arts.

Headlines we have lived... number 28 "Your conversation is in the oven" It's microwave phones.

ISSUE 83 9 JUNE 1990
The CDTV is here! Well in the United States anyway.

ISSUE 84 16 JUNE 1990
"ATARI DISMISSES 'IMMATURE CD-ROM"

MGT calls in the receiver.

ISSUE 85 23 JUNE 1990
"C64 CONSOLE THIS AUTUMN" *Express* again.

Headlines we have lived... number 29 "NO SLEEP TILL PUTNEY" A remote control device for the PC.

Headlines we have lived... number 30 "It's Lisa with an aaah... " 2,700 Mac Lisas are buried in the US.

ISSUE 80 19 MAY 1990
Express reveals Sony's handheld CD-I devices.

A woman gives birth, but only after finishing *Xenon II* which she played while heavily on labour.

Headlines we have lived... number 31 "SOVIET HOBBIT COVERS THE RED END OF THE SPECTRUM" Er yes... the Soviet Speccy is here.

ISSUE 87 7 JULY 1990
Headlines we have lived... number 32 "My, what a big chopper!" We do make the most of Domark's advertising hunk with his axe.

We were also carried away by the World Cup, a dead red indian, and a PCW to bring you... "ENGLAND A CERT FOR THE CUP, SAYS PCW"

ISSUE 88 14 JULY 1990
Headlines we have queried... number 1 "Give a monkey an Apple Mac and she will read her books" Um, yes, this one was about a Californian gorilla and a Mac.

ISSUE 90 28 JULY 1990
First news of the new Amiga games bundle featuring *Days of Thunder*.

ISSUE 92 11 AUGUST 1990
"A must for every Boeing 747 owner; the new Automated Washing System can wax a jumbo in 80 minutes" Er... yes.

ISSUE 93 18 AUGUST1990
Headlines we have lived.... number 33 "CHANT PUTS A HEX ON LOTUS" The League for Programming Freedom picket Lotus with the following hex chart; "1-2-3-4, Kick that lawsuit out the door! 5-6-7-8, Innovate don't litigate! 9-A-B-C, Interfaces should be free! D-E-F-0, Look and Feel has got to go!"

ISSUE 94 25 AUGUST1990
"SHAREWARE FURY AT CHILD PORN CHARGE" Shareware 1990s is hassled by the *News of the World* for one of the most boring maze games ever seen.

ISSUE 95 1 SEPTEMBER 1990
"IRAQIS STEAL BRITISH COMPUTER SECRETS" Yes, they trot off with a high-tech encryption/decryption device.

ISSUE 96 8 SEPTEMBER 1990
Headlines we have lived... number 34 "Plastic Macs arrive at last"

ISSUE 98 22 SEPTEMBER1990
"LONDON OVERRUN BY MONSTERS" The definitive CES report. Written at pace and with horrendous hangovers at the show itself.

ISSUE 99 29 SEPTEMBER 1990
Headlines we have lived... number 36 "Lots and lots of funerals" *The Godfather* become a game.

ISSUE 100 6 OCTOBER 1990
Er, that's it.

◆ Free Ads

A500, monitor, 1Mb, printer, modem, external drive, loadsa software will sell or part exchange for a PC. Anything considered, phone Dave evenings after 6pm on 0761-52450

DATAEASE 4 - bought this year, manuals, tutorials etc. Aducation verson database for PC £150. Also Psion organiser model CM, manual £55. Tel. 021-777 8808

MACINTOSH SOFTWARE unused! Trapeze £130, Read Set Go V.4 £250, Image Studio £250, IBM PC: PageMaker £250. All new! Contact Derek on 081-677 4727.

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SINCLAIR 128K +2 joystick, keyboard £50. Light pen + programs and manuals £2, Games ranging from 25p - £1 and magazines 10p each. Perfect condition. Contact Gregory at home on 081-348 3134

AMSTRAD Consise Basic specification £5.50 - RRP £19.99. NCE 43, 47-60, 62-67,69- 49p each. Amstrad software from 30p. Anthony Brenchley, 25 Glanfield Road, Beckenham, Kent, BR3 3JS. Tel. 081-658 4134

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WANTED: Experienced ST artist to write regular column for PD disk magazine. No money, but your name in neon lights! Phone John on 081-546 0993

STEN NO.0 news disk free! For Atari ST! Send disk and SAE to Paul Sealy, 31 Hartfield Crescent, West Wickham, Kent, BR4 9DW.

CARL'S 2ND CPC NEWSLETTER now ready. Send 30p plus A5 or larger envelope with 20p stamp to: Carl Surry, 37 Fairfield Way, Barnet, Herts, EN5 2BQ.

FEMALE ARTIST looking for contacts to do artwork worked with Automaton and PSi. Write to Kay, 23 Derby Road, Gloucester, Gloucestershire.

JUNE ISSUE (issue 2) of the disk-based ST magazine, "Stampede" has Signum virus on disk one!

FREE - latest virus killers/finders disk or RAM resident for the IBM PC or clones. £2 each (for the disk + p&p) Tel. 0905-53248

◆ Personal

HELP wanted to connect spectrum +3 to Casio FX-850P personal computer using RS 232 Tel: (0324) 712505 after 7.00pm.

HELP! Anyone got any information about programming the Archimedes VID registers? Contact: Stuart Tyrrell, 2 Woodside Avenue, Moss Bank, St. Helens, Merseyside WA11 7BS.

SIMON Hardy contact Martin Ellerker from P.W.S. before 18th September. Write to me at 22 Orchard Lane, Woodnewton, Petersborough, PE8 5EE.

SPECTRUM plus three owner seeks penpals all ages females welcomed guaranteed 100% reply contact Darren, 16 Four Winds Road, Dudley, West Midlands DY2 8BY.

MODEM Dowty Quattro. Boxed, manual fully working original cost £795 auto dial auto answer sell for £300.

THANKS. Fellow Atarian for the 8 bit stuff. Graham Bilston.

DO you own a Spectrum and a Swiftdisc interface. If so please contact Gary Bennett to exchange hints and tips etc.

◆ Help wanted

WORDSTAR release 1.OA help can anyone tell how to print files more than one at a time. Heton, Burnt Hills, Thick Hollins Meltham Huddersfield HD7 3D8.

HELP anyone know the address or telephone of Shugart please phone Nigel 0293 (Crawley) 513354 anytime.

◆ Wanted

WANTED Atari SC1224 and/or SM124 monitors in good condition tel: 0469 60009.

WANTED for C64 disk "Hunt for Red October" must be original must have manual £15 waiting.

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MUSIC X - Wanted a manual for the Music X complete package also any IFF samples for the Amiga also cheap software for sale - Mike 0742 686977.

ACID music for Amiga wanted and graphic. Disks returned with extra blank free. Only new stuff to: Steve, 26 Reeve Road, Holy Port, Maidenhead, Berks, SL6 2LS.

WANTED does anybody have an Expson FX80 printer manual. Please ring 0992 467398 and ask for Franco.

WANTED user manual for Citizem 120D printer. Tel (0925) 227142 and ask for Phil.

ST/E contacts wanted into games midi synths Medway Dompey Automation to swap programs phone (071) 4852012 or 46 Twisden Road, London NW5 IDN BEN.

2400 Moden external wanted - must be BT approved and Hayes compatible will offer £550 of ST Software and 1200/1200 modem: Rob, 7 Powis Grove, Kenilworth, Warks.

IS there a C user group out there? If so phone Shane on 0638 665194. Also Lattice C V3 wanted. for the Atari ST please.

C64 help! Micro mud program and data discs wanted to buy, hire or loan. Mine are damaged. TimProctor 12 Judilee Drive, Thornbury, Avon B512 2YG.

SAM Coupe public domain wanted for new and growing library all disks/tapes returned if with S.A.E. send to B. Atkinson, 60 Cobourg Street, London NW1 2HB.

MEGA drive carts wanted. Will pay £15 each. Write to Kenny 62 Carrol Cr., Ormskirk, Lancs. L39 1PZ.

HELP wanted: does anyone know anything about a Sirius computer? DOS and manuals require will pay reasonable price - contact Paul on 08244 432.

WANTED: Rainbird's Advance Music System for Amstrad CPC and help on direct screen memory accessing in M.C. (pixel scrolling, collision, detection etc.) Nick, 7 Hawkswood Avenue, Frimley, Camberley, Surrey GU16 5LH.

WANTED Amiga 500, good price paid. Must live somewhere in South Wales or nearby. Phone David (0633) 893543 after 4.00pm. Thanks.

1581 disc drive wanted for C128 computer - phone 0293 882016 evenings and weekends - ask for Vic.

AMIGA 500 wanted for a level student. Can pay up to £200. No extras needed. Tel (0274) 876154 evens.

WANTED: cheap parallel 9-pin printer about £30-£40. Nothing fancy, as long as it works OK. Phone Paul on: 0298 24147 evenings.

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AMIGA hard drive wanted - call Simon at 0705 750483, or write to Simon Brown, 82 Highland Road, Southsea, Portsmouth, Hants, PO4 9NF.

WANTED music X for Amiga. Also wanted Synth module to complete midi setup. Also HWTS/tips for Music X call Paul (0242) 236428 or write Flat 1, 2 Bayshill Road, Cheltenham.

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WANTED Scart Sega Megadrive will swap for a Pal version or sell for £140 - phone Peter 0602 299435.

AMIGA A500 wanted. Must be in good working order. Software not essential. Pay around £200 depending on software. Tel Leeds (0532) 871971 after 6.00pm.

WANTED 3 and a half inch external disk drive with built in PSU for Amiga. Must be good condition - cash waiting. Tel Gary on 0473 713715 between 6-9pm.

BROKEN Amiga A500 wanted to attempt repair of mine. Any condition considered or any accessories. Call Bill 081 3015538 evens.

AMIGA A1060 Sidecar System disk wanted. Also any help and tips greatly appreciated. Tony Redcar (0642) 470144.

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AMSTRAD PC2086 50 mono plus Epson LQ400 or similar combination for a start in computing write. Mr. W. Clelland, 130 Alexander Ave., Twelchar, Kilsyth, Glasgow G65 9RJ.

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AMIGA swap DWC point 2 and Voyager (brand new) and escape from robot monsters for Photon Point 2 - contact Nik 092576 4907. Also contacts wanted for Amiga.

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WANTED ST. contact send list to Thuan at 14 Deepmoor Road Stechford, Birmingham B33 8ET. 101% replay.

COMMODORE modem - best offer or exchange for original disc programs with manuals - wanted - manual/copy for Seikosha printer SP180 VC. Please phone 021 444 6460.

STOCK control program wanted for Amiga 500 must be able to zero stock levels and free stock coding up to 15 characters - Paul 0332 760353.

LOGO wanted for Atari ST 081 3405231.

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PHILIPS MSX2 8280 computer and software wanted urgently. Good price offered. Tel Douglas 0292 79136.

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WANTED: Batman the movie for Atari 520 STFM will swap Batman the Movie for Amiga - phone (0706) 522354 from 6.00pm onwards.

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ANYONE using Star STX80 thermal printer and willing to lend me the manual? I need codes for underline etc. or else please send large hammer. Contact 0524 418806.

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STING Public Domain Library, for Atari ST. send an SAE for your free disk catalogue to: 32 Whitefield Square, Westvale, Kirkby, Liverpool, L32 0UT.

X-COPY 3 Tetra copier (play Tetris white copying) and loads more utilities: send £1.50 and SAE to Philip, 24 Shyshack Lane, Baughaurst, Basingstoke, Hants, RG26 5NH.

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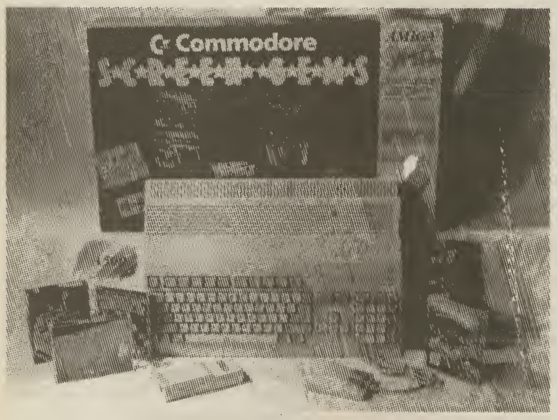
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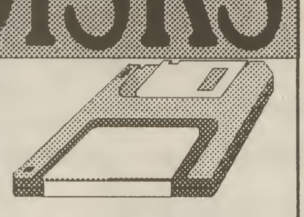

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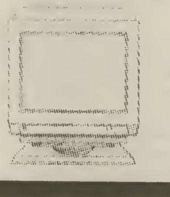

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CONSOLE ZONE

Your weekly guide to the world of console gaming with Richard Frederick

NINTENDO NES

Mindscape is releasing the classic computer game *Mule* onto the NES. "*Mule* is out-of-this-world fun for Nintendo game fans," says Mindscape. "*Mule* is a galactic game from another world. This science-fiction contest is the latest planetary power-play manufactured for Nintendo Entertainment System enthusiasts. The action takes place on the barren, newly discovered planet IRATA, where you need MULEs (Multiple Use Labour Elements) to achieve your goal of supreme power. These mechanised marvels will do all your dirty work: growing food, mining and producing energy. With their help you can become the richest, most powerful inhabitant on IRATA. The more MULEs you have, the more power you'll get!"

"On your way to owning the most land, mining the most precious metals and supplying the most food and energy to the peasants (your opponents), don't forget that treachery is acceptable. Wealth, power and opportunity; *Mule* has it all. For an added challenge, *Mule* allows you to play against up to three friends when you have either Nintendo's NES Satellite or NES Four Score. The NES version of *Mule* costs $49.95."

KEEP IT CLEAN

New of a console care kit has just hit us from America. Here is what they say about it. "The Eliminator is Naki's family of video game care and replacement accessories designed to eliminate and prevent power flashes, blank screens and scrambled pictures. Maintain and clean both game cartridges and system control units for Nintendo, Gameboy, Sega, Megadrive, Lynx and PC Engine. Easy to use, unsurpassed 3M quality, with careful attention to product design, packaging and pricing. The results? Satisfied customers and higher profits. Over 30 million video game systems need cleaning weekly with systems in 25 per cent of American homes. Help clean up with the Eliminator today!"

"Problems are usually created by an oxide build-up on the contacts and connections. This units helps to prevent problems before they occur. A must for every Nintendo owner. Kit #1 is designed to maintain and clean both game cartridges and the system control unit. The Eliminator is the only professional cleaner that cleans the contacts of the Nintendo in seconds, assuring peak performance." You can contact Naki by writing to: PO BOX 46699, Los Angeles, CA 90046, USA.

WANTED: DEAD OR ALIVE!

We need your video game hints, tips, cheats, maps and high-scores on your favourite games available for the Sega Megadrive, Nintendo Gameboy, Sega Master System, PC Engine, Nintendo Entertainment System, Atari Lynx and SNK Neo-Geo. Send everything to: The Console Zone, *New Computer Express*, Future Publishing Limited, Beauford Court, 30 Monmouth Street, Bath, Avon BA1 2BW or fax 0225 446019.

NINTENDO GAMEBOY

LJN has just released *The Amazing Spiderman* on this popular piece of palm power. "One of the biggest comic book super heroes of all time is about to get much bigger with our *Amazing Spiderman* for Gameboy," says LJN. "*The Amazing Spiderman* features seven levels of web-slinging action, incredible cityscape graphics; amazing 96 per cent awareness among 6-49 year olds."

PLAYING TIPS

NINTENDO NES

Continue playing *Mickey Mouse* by pressing [Button A] and [Start] on the title page after you've lost all your lives. You'll then continue the game from the last level you played.

NEC PC ENGINE

For extra firepower in *Galaga*: press and hold [UP] on the title screen, hit [RUN]. Pick a single ship and the first pod on the select mode and you'll get a triple ship.

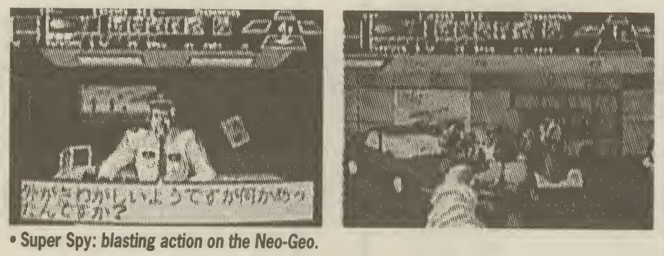
ATARI LYNX

The first ten *Chip's Challenge* passcodes:
1: BDHP, 2: JXMJ, 3: ECBQ, 4: YMCJ, 5: TQKB, 6: WNLP, 7: FXQO, 8: KCRE, 9: VUWS, 10: CNPE

GAME OF THE WEEK

The Super Spy • SNK • Neo-Geo • £199.99

The *Super Spy* is a playable and graphically excellent version of *Operation Wolf* with fists! The story according to SNK: "Fighting against a terrorist group who hold several top scientists captive, forcing them to construct a powerful new bomb, you become *The Super Spy* whose mission it is to gather information on their location and fight your way to the rescue. Full screen characters make this game incredible!" You control this giant pair of hands and feet as your pummel the punks in Mike Tyson/Bruce Lee fashion. Along the way, you can pick up a knife, Colt .45 pistol and a Mini-Uzi automatic machine gun for extra fightpower. Very violent, very satisfying. Go kick some ass with *The Super Spy*.



• Super Spy: *blasting action on the Neo-Geo.*

SEGA MEGADRIVE

Sega's latest release for its 16-bit beauty is *Moonwalker,* based around the Michael Jackson feature-length music video. Mr Jackson apparently even helped design the game! "It's here. The hit music video becomes the first ever hit music video game," says Sega. "It was designed by Michael Jackson himself. His moves match his video so closely, it's uncanny. The animation is unmatched. The stereo sound uses Michael's actual voice. And the music is unlike anything you've ever heard before in a video game. It's only possible with the 16-bit power of Megadrive," boasts Sega.

"The totally evil Mr Big is kidnapping the children of the world. It's up to you to rescue them. In 16 different rounds. Take on Mr Big's deadly henchmen in Club 30 using your kicks, jump spins, punches and hat attacks. Battle wild dogs and young punks in the high-rise garage. Fend off zombies in the cemetery. And dodge laser beams in Mr Big's high-tech hideout. This game's got it all. All of this to the stereo sounds of *Smooth Criminal*, *Beat It*, *Thriller*, *Bad* and *Billie Jean*. Finally you transform into a giant flying robot."

PLAYING TIP

Walk this way in *Lake Deep* to complete Alex Kidd in miracle world: Sun, Squiggly Lines, Moon, Star, Sun, Moon, Squiggly Lines, Fish, Star, Fish, Crown.

SEGA MASTER SYSTEM

Mirrorsoft is to release its famous *Speedball* computer game onto the Sega Master System on the Imageworks label. "It's fast, it's exciting, it's the award-winning game from the Bitmap Brothers, it's *Speedball* on the Sega Master System," says Mirrorsoft.

"An original future sport strategy game, *Speedball* combines stunning graphics and digitised sounds with fast and dangerous gameplay, with two teams vying for control of the steel ball and ultimate victory. Strategy and speed are essential for success, with players jousting and tackling in their competition for the ball. Weaponry ensures that you can blow the opposition away – if you're fast enough. Another dimension is added to *Speedball* with tokens which appear on the floor of the speed dome, which, when collected, provide players with an assortment of power-ups such as faster movement, better weapons, etc – essential if you're to survive *Speedball.*"

THE PD COLUMN

There's a wealth of free software out there which is yours for the price of a disk. This week Adam Waring looks at some of the gems which are out there just waiting to be discovered...

Utilities Disk 14 • C64 • ICPUG

Commodore 64 owners could be forgiven for thinking that there's no PD for their machine. They would be mistaken however, as ICPUG, every Commodore owners favourite user group, has plenty of PD for the old beast.

Utilities disk 14 may be a crap title, but it's full of a wonderful assortment of public domain utilities.

Future Writer is a word processor with a difference. As you type away, music plays away in the background. Very good it is too, taking advantage of the C64's advanced sound facilities. There are a choice of tunes to play, and you can select different character sets to type with (although they don't print on paper as they do on screen). It's a fairly silly idea, but fun all the same.

There are a couple of utilities for making life with your disk drive easier, some printer utilities, and a program that allows you to create your own menu screens.

Before you can get hold of any of this though, you'll need to become an ICPUG member. To do so you'll need to send off a £16 membership fee. Mind you, after that all PD software is free, and all that is required are blank disks and stamps to cover the postage.

Adventure Writer System • ST • Exmoor Software

Adventures are difficult programs to write. BASIC is slow, and not really structured for the huge amount of text data needed. Adventure Writing System – ADSYS for short – aims to provide a friendlier way of writing adventure games, without being over-complicated.

One or two sample adventures are included on the disk. There's the one that started it all, the classic *Collosal Caves* for you to get lost in. You can look at the code used to create them, useful for understanding how the system works, and a good place to start for writing your own adventures.

You can define locations, objects, descriptions and puzzles with relative ease. All that's really required is a devious mind, bent on thwarting any player's progress.

Once you've written your adventure masterpiece, what should you do with it? Well may I make a suggestion – why not put it into the public domain so that others can enjoy the challenge?

Accessory Compilation • ST • Elmsoft • Acc 1, 2, 3, 4

Desktop accessories are mighty useful things. Almost at will, you can stop what you're doing, and load something else for a few minutes. Then you can go back and resume the previous task.

Just imagine, you're wading through a boring set of accounts (or something), when you suddenly get the urge for a game of *Breakout*. You never know, it could happen. Normally, you'd have to save all your data, quit the program and load up your game. And then if your boss comes in you'd panic as you try desperately to switch off and load the accounts again without him noticing.

With an accessory, it would simply be a case of clicking on the accessory menu, the game would load in an instant, and you could play away with your hearts content – until you hear the creak on the floorboards outside your door. Then you'd just close the application, and keep your job!

Of course it's not just games that make desk accessories. Plenty of utilities, desktop tricks and mini-programs can reside there too. *Word Count*, for instance, is great for using with a PD word processor which doesn't happen to have one built- in.

There are 80 of the things on these two double-sided disks! The only problem you'll have with these programs is deciding which ones to use!

Jeopard • Amiga (1Mb) • Senlac • Disk 410

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Lorenzo's Domain
Amiga P.D. & Shareware

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102: Lorenzos music utility disk :Rippers and Players galore
103: Digital Concert no 4: by Flash Productions
104: Lorenzo's musical delight
105: Future composer
106: Noise Tracker Collection (3 disks)
108: Freek'd out by the Crusaders
109: Flash by Queen : (2 Disks)
111: Rave Demo (1 Meg) by H.C.C
113: Dmob Music Demo No 2

DEMOS, INTROS & MEGADEMOS
204: 8 radical demos by Abandon, Cave, Dual Crew, Kefrens, Mahem, Vision etc
205: The Dexion Megademo: Cooooool stuff baby
206: 5 major demos including: The Revenge Of Babbnassen, Cebit 90 by Red Sector
207: 6 of the best including: Follow Me by Red Sector, Celtic, T.P.L etc
208: The CryptoBurners: Megademo 2
209: Scoopex: Mental Hangover
210: Alcatraz: Megademo 4 : (3 disks)
211: Outsiders: Acid Demo
212: The Kefrens: Megademo 8 (2 disks)
213: The Dragons Megademo
214: The Silens Megademo
215: The Predators Megademo (2 disks)
218: The Silents: Fantasy: (2 disks) great pictures
219: Bacteria: The Crusaders
220: Collection of intros including Trip to Mars and Meg Zarjaz
221: Popeye Meets the Beachboys: It's ravin mad pal.
222: BudBrain Mega Demo X (2 disks)
223: Deathstar Mega Demo (2 disks)
224: H.C.C Toxteth Demo: Hilarious
226: Freddy Krugar Rap
227: Mindwarp Megademo Vol II
228: Robocop demo.

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300: Graphic Slideshow by The Dark Wizard
301: IFF Picture Show
304: Fish 295: Mandel Mountains
305: Lorenzo Graphic Utilities
306: Newtek Demo Reel 3 (1 Meg) (2 disks)
307: Luxo Teenager animation: (1 meg) : A very good animation of a desklamp
308: Nightbreed Slideshow by H.C.C: These are the best pics I've seen yet.
309: Forgotten Realms Slideshow by Fraxion
311: Viz Slideshow: 12 Great digitised pics fromVIZ 1990 Calendar
400: Puggs in Space by Dionysus: Great anims and Brill music.. Yeehaa
403: Agatron Slideshow: More great stuff from Tobias Richter
404: Magician & Runner: Very good
405: Agatron Anim £25: The Run (1 Meg) Could be his best yet
407: Walker 1 Animation (1 meg). Been around for a while. A classic
408: Walker 2 Animation (1 meg). Yep! You got it, another classic
412: The Education of Cool Cougar (1 meg): Brilliant
413: The Probe Sequence
414: Space Ace Demo: (1 meg) Animation Sequence from game
415: Fillet the Fish Animation by Jester Bros International

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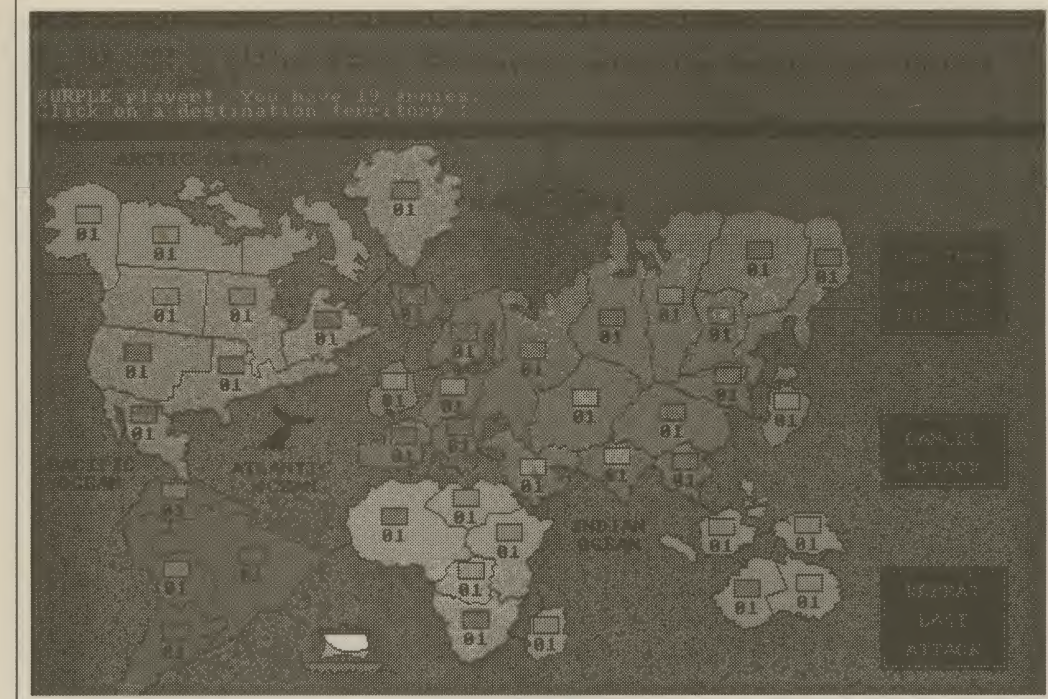

PURPLE player! You have 19 armies.
Click on a destination territory !

• Live out those dreams of global domination with Jeopard.

and have designs on becoming the ruler of the whole world, then *Jeopard* is just the thing for you.

Jeopard is in fact identical to the famous board game *Risk*, except that you play on the computer instead. The map is identical, even down to the graphics that appear in the oceans.

The map is split into six continents, and further into individual territories within those continents. Up to six players can take part in the quest for world domination.

The idea is to take control of these countries by force. Armies are allotted to each player, and by strategic manipulation, must spread through the world by conquering neighbouring territories.

Unfortunately there are two things against *Jeopard*. One is that the interlaced mode has been so unless you have an expensive monitor it flickers like crazy.

The other is that there isn't an option for the computer to play. This means that you have to have at least one chum to play properly. ■

WHERE TO GO

• ICPUG, The Membership Secretary, PO Box 1309, London N3 2UT. Telephone 081-346 0050. Whatever computer you own, as long as it's a Commodore, ICPUG are there to help. They're a friendly bunch, but you've got to be a member. The price per disk copied? Nil, naught, zero, zilch. Once you've paid your membership fee, everything's free from then on.

• Senlac Software PD, 14 Oaklea Close, St Leonards On Sea, East Sussex TN37 7HB. Telephone 0424 753070. Plenty of Amiga PD for the asking. There's a minimum order of five disks, where you'll be charged £1.75 a disk.

**• Exmoor Software, Queen Street, Lynton, Devon EX35 6AQ. Exmoor provide an ST public domain service with a difference. You choose the programs to go on your disk!
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• Elmsoft, PO Box, Loughton, Essex IG10 2EE. They may have named themselves after a tree, but I 'wooden' hold that against them! (Great gag, eh readers? No, oh well.) Prices start from a measly 90 pence.

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ALL FIRED UP

THE NORTH YORKSHIREMAN
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• Get the steam without the sweat. This is a real LMS loco, but you can drive a simulated one at home.

Train spotting is a peculiarly British hobby, but its computer incarnation isn't as boring as you might imagine. Keith Pomfret put on his anorak and joined signalman Doug Thompson on the computer tracks.

If you're the sort of person who sees a train as an infuriating mode of transport that is always delayed, never has a buffet and costs too much because of BR's surreal advertising, you'll probably never be a convert. If however, there's something about the Orient Express, Mallard and the mention of George Stevenson that stokes a little fire somewhere, there's hope for you yet.

While it takes a certain dedicated breed to spend long hours on the platform collecting numbers in summer and winter, those of us who yearn for the dry sulphurous heat of the cab (*Yum yum.... egg and bacon on the fireman's shovel – Ed.*) or the wood and oil smell of the signalbox can get some way toward our dreams with the train software available for our micros.

This software falls into three basic categories. First is the schoolboy's dream – the engine driver. These are simulations that put you in the cab of either a diesel or steam locomotive, give you the controls and let you loose on a pre-set journey to test your abilities.

Secondly, there's the overall railway company simulation where you have to build and run an entire railway, making all of the decisions involved from building lines, choosing trains and siting stations to what route a train will take.

Finally, and saving the best until last, there are more specific simulations in which you play the controller of a particular station, section of line, type of loco or similar. Although these are railway orientated, they constitute a fine multi-dimensional puzzle, and after a few minutes play the action can become so rapid and engrossing that it's easy to forget the railway scenario.

Colleagues scoffed at the idea of train spotting but it wasn't long before their over the shoulder view led to demands that they should have a go. Out of seven, initially unenthusiastic recruits we managed to develop at least one competent shed master, three signalmen and even a depot manager.

It's worth emphasising that to discount railway software because of the image of the train spotter is to deprive yourself of some of the finest multi-dimensional puzzles that exist.

To attempt Kings Cross 1976 in the rush hour with a strict timetable and limited tracks and platforms, and then realise that there are always one or two more trains to slot in than there are slots for them, is as engrossing a pastime as any session of chess, backgammon or cribbage.

Whichever software is for you: driver, signalman or manager; you will get many hours of pleasure, and an interesting insight into the jobs of the professionals who keep the country on the rails.

In real life Doug Thompson pulls the signals on the Nene Valley Railway near Peterborough. However, we dragged him away from the pleasant peace of his signal-box in the fenlands and swapped his levers for a PC keyboard. After a month or so playing a range of simulations from SIAM he brought back this report:

These simulations give you the opportunity to try and control train movements within a number of options: at a terminus station, a through station, a whole section of line, or a fleet of locomotives.

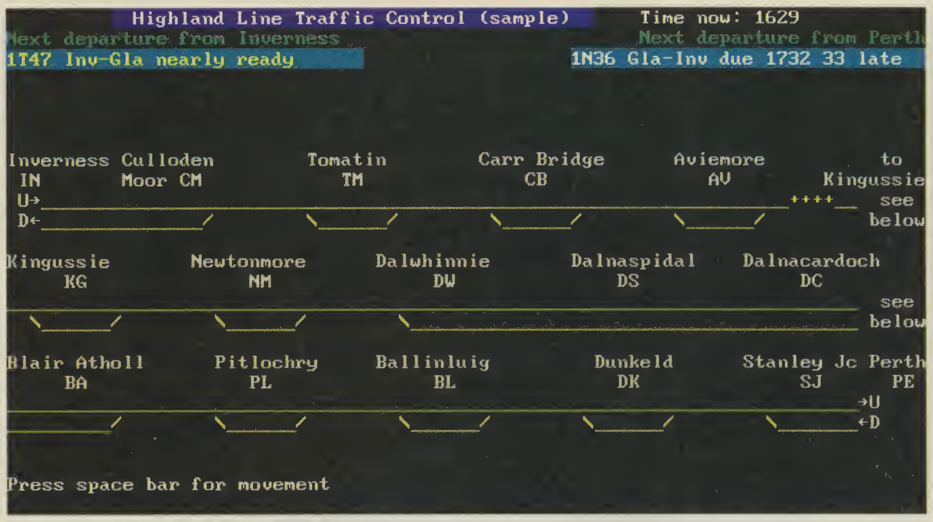
In the SIAM range there are some 30 simulations that will appeal to the railway enthusiast and to those who like a mathematical based problem. I have looked at several in the series. Here's what I thought of them.

BATH GREEN PARK 1961

This is set in the days of steam (some would say the good old days). Bath Green Park station no longer exists, unless you number the local Sainsburys among your loco-sheds. But it was once the busy terminus of the Somerset & Dorset Railway and a major stop on the Midland Railway network.

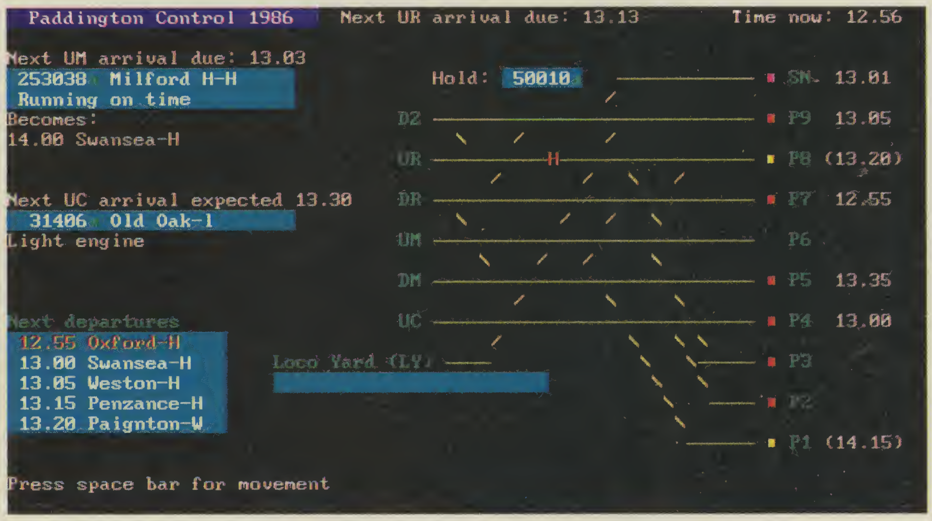
You are in charge of all train and locomotive movements in the station area which includes the Midland line to Bath Junction, the Somerset & Dorset to the double track section just after Midford and the two sheds (MPs) at Bath Green Park.

Your shift starts at 1.30am on a busy summer Saturday and ends at 19.45 the same day. During this time you have to make sure that you have the correct type of locomotive available for each train. You have to turn each one so they are going forwards (unless it's a tank engine) and make sure they have filled up in advance with plenty of coal and water. At 01.30, you have a little breathing space in which to oil your signals.



```
        Highland Line Traffic Control (sample)        Time now: 1629
Next departure from Inverness                            Next departure from Perth
1T47 Inv-Gla nearly ready                               1N36 Gla-Inv due 1732 33 late

Inverness Culloden        Tomatin        Carr Bridge        Aviemore          to
 IN        Moor CM          TM               CB                AV        Kingussie
 U→                                                                   ++++     see
 D←                                                                            below

Kingussie       Newtonmore       Dalwhinnie       Dalnaspidal      Dalnacardoch
   KG               NM               DW                DS               DC
                                                                               see
                                                                               below

Blair Atholl        Pitlochry     Ballinluig         Dunkeld          Stanley Jc Perth
   BA                  PL             BL                DK                 SJ      PE
                                                                                 →U
                                                                                 ←D

Press space bar for movement
```

• *Keeping track of the traffic in the Scottish Highlands. The only passing places are in stations.*



```
 Paddington Control 1986    Next UR arrival due: 13.13         Time now: 12.56

Next UM arrival due: 13.03
 253038  Milford H-H                 Hold:  50010                  ■ SN  13.01
 Running on time
Becomes:                       D2                                  ■ P9  13.05
14.00 Swansea-H
                               UR                 H                ■ P8 (13.20)

Next UC arrival expected 13.30  DR                                 ■ P7  12.55
  31406  Old Oak-1
Light engine                   UM                                    P6

                               DM                                  ■ P5  13.35

Next departures                UC                                  ■ P4  13.00
 12.55 Oxford-H
 13.00 Swansea-H        Loco Yard (LY)                             ■ P3
 13.05 Weston-H
 13.15 Penzance-H                                                  ■ P2
 13.20 Paignton-W
                                                                   ■ P1 (14.15)

Press space bar for movement
```

• *A bit of a poser this one: keeping the traffic flowing smoothly one busy lunchtime at Paddington. The simulation doesn't explain why they leave it to the last minute to announce a train which has been there half an hour though.*

The first scheduled arrival is not until 02.20, which gives you time to service as many locos as possible and place them in the sheds so that you can get at them as required. Bath Green Park station only had two platforms and at certain times during the day you have the next train due into a platform within a few minutes of the last departure.

Most of the trains that come from the Midlands will reverse at Bath, have a new loco put on the front and then carry on down to Bournemouth. Some of the heavier trains, which require two locos, will be returning later in the day, again reversing at Bath and then heading back towards Brum. The train times are based on the actual time table that was used in 1961, so you can get a feel of what it must all have been like.

This simulation does not include any freight trains because this would make it too complicated. You can select the level that you feel you can cope with and I found that I had to play through the whole simulation two or three times on the easiest level before I could tackle the second level.

I have so far reached level four out of the five; and this means you get extra relief trains running to cope with the summer traffic, as well as locomotives that come in needing repairs and which are therefore not available for some time.

This can be a very frustrating situation, but also very realistic (even of BR today). You can, of course, have trains running late and even some running early, which can make it difficult to decide where to platform the train. Or do you hold the platform empty and keep another train waiting. The choice, as they say, is yours.

An essential feature is the ability to save the game as you go, very important because it would take upwards of three hours to go through the whole simulation. This also has another useful advantage in that, if you can see an awkward situation coming up, you can save the game before trying a solution. If it doesn't work, re-load the saved game and keep trying other approaches until you crack it. You can tell how well you are doing at the end of each session because you get an efficiency mark. My best on the easier levels is 95 per cent, on level four I am down to 75 per cent!

Interestingly enough, I already had this simulation in my collection before these reviews were planned. I can confirm that it is as enjoyable 12 months on as it was the first time.

KINGS CROSS 1976

Kings Cross is the busy terminus of what used to be the London & North Eastern Railway (LNER). This simulation is set nearer to the present, in the days of diesel locomotives – with the high speed trains (125s) just coming into use.

You control the lines in, through the Gasworks Tunnel, and the 10 platforms. The West Bay is used for unloading parcels and motorail vans and there is a small stabling point for refueling the locos.

Your day starts at 06.30 and goes through until 14.45. During this time you naturally have to get the trains into a platform as quickly as possible. Once they their passengers have disembark you either send the trains to the depot and get ECS (Empty Coaching Stock) working, or you put another locomotive on the front ready for departure to the North.

You also have to run the local electric services to Royston and these can only use platforms 9 and 10 because they are the only ones that have overhead power cables. You will also have ECS working from the depot to form trains for the North.

As with Bath Green Park, trains can arrive early or late, which can cause major difficulties. I enjoyed this simulation as I have spent many an hour standing at the end of the platform watching an almost endless stream of rail movements. I must admit I found this one slightly easier than the Bath Green Park simulation, but it is a challenge nonetheless.

WEST HIGHLAND LINE 1984

In this you have control of the Scottish line from Craigendorn Junction (which is just outside Glasgow) to Oban and Fort William. You are presented with a screen showing the various passing points along the line. You start at 06.30 and finish at 20.00; a very long day when you have to concentrate on getting your trains to their destination with as little delay as possible.

This is not as easy as it may seem because the passenger trains have to be given priority over the freight trains and you have to calculate, from where the trains are on the line, how long they will take to get from one section to another.

There are temporary speed restrictions due to engineering works or operation difficulties at either Fort

PC AND ST PLATFORM

The name synonymous with PC railway software is SIAM. Although it does not produce simple train driver simulations, it has managed to captured the market for railway games among the 'serious' PC users and offers a choice of 33 programs which cover a range of situations such as through-stations, termini, fleet managers, railfreight and shed masters.

These 30-plus programs are all well thought out and accurate, and quickly gained the *Express* seal of approval. All cost £15 and are available for the PC and ST.

So if trains are your subject and you know someone with a spare £500, this will definitely go to the top of your letter to Father Christmas. (SIAM is on 0442 67220.)

Class 45 Fleet Manager, Shedmaster, Bounds Green, Liverpool 1972, Liverpool 1986, Euston 1987, Crewe 1986, Bath 1961, Birmingham 1984, Glasgow 1987, Class 47 manager, Highland Line 1984, Class 55 Fleet Manager, Shedmaster Finsbury Park, Kings Cross 1954, Kings Cross 1978, Kings Cross 1990, Doncaster 1986, Shrewsbury 1962, West Highland 1984, Leeds 1989, Railfreight Buxton, Exeter 1987, Shedmaster Old Oak, Paddington 1959, Paddington 1972, Paddington 1986, Class 50 Fleet Manager, Reading 1959, Reading 1987, Burlington Northern, Penzance 1932, Penzance 1955, Penzance 1984

From MicroProse, for the PC only, there's the *Sim City*-like *Railroad Tycoon*. This allows you to run a complete railway in the UK or the US starting from scratch or from a demo set up.

Every decision, from the route to the formation of the trains, and whether to compete with other railroads is included. It's not as detailed as the SIAM games but *Railroad Tycoon* gives a broad overview for the megalomaniac train spotter. It costs £34.99.

AMSTRAD CPC

The CPC would have missed the train altogether if it hadn't been for a couple of steam engine driver simulations from Hewson. *Southern Belle* and its successor, *Evening Star,* put you on the footplate of a couple of the most famous journeys in the UK at the time when a head out of the carriage window still meant an eye-full of hot coal.

All of the controls, including the steam regulator, whistle and even coal shovel, are available and you have a choice of journey. Whether it's London to Brighton at the head of the *Southern Belle* or the slightly more difficult *Pines Express* from Bath to Bournemouth, there's a lot of good gameplay, only let down by the 8-bit display of the CPC.

The programs cost £17.99 and are also available for Spectrum, C64 and BBC.

Hewson is on 0235 832939.

William, Oban or Glasgow. Once I even had to cope with a derailment in the Glasgow area which delayed all northbound traffic and that really did mess up my shift.

You can tell which trains are where by the reporting number that is allocated to each train. The first number in the series is the most important, as this tells you the type of train that you are dealing with; for instance 1 is an express passenger train which must be given priority. Then there are company freight trains which are not so important and have to give way to Speedlink freight. 0 is a light engine and has the lowest priority.

CREWE TRAFFIC CONTROL 1986

Crewe has always been well known as a very busy junction and it is also the changing point for locos for the Holyhead trains. You have to control train movements thorough the station area on a busy Saturday, starting at 09.30 and finishing at 14.30.

As you would expect, trains run early or late to mess you up, some trains pass through non-stop, others terminate, including most local services, and you have to control movements on four lines coming in either side.

It is not unusual to have two or three trains timed to arrive at the same time, and this demands a lot of quick thinking when your platforms get used up very quickly. You often find yourself without anywhere to put the incoming train, which loses you lots of points.

You also have freight trains coming through, and these have an annoying habit of blocking the line just when you want to get a passenger train, that's already late, out of the station as fast as possible.

With this simulation you very rarely get more than one minute without some sort of train movement. My highest mark on this one is 91 per cent. I haven't managed to get it any higher yet and it seems to get more interesting and frustrating each time I try it.

Before we finish there are some complaints and some improvements I would like to see made:

- Bath Green Park. On the higher levels, a locomotive sometimes gets derailed in the shed, which seems an unnecessarily artificial way of introducing a new element of panic!.
- Kings Cross. I'd like to have a crack at longer shift. If a train is delayed the program waits until you have solved that problem before sending in another train. It would be more realistic if another one came along after 15 minutes to complicate matters.
- West Highland Line. In the instructions a list of the meaning of the reporting numbers would be useful, as would the ability to hold a freight train in a loop while passing another train in the same direction through the other side of the loop.
- Crewe. Here I'd like to have the ability to hold a train on the through-roads if required. This would be especially useful when handling freight trains that have to cross most – if not all– of the tracks.

However, apart from these minor points, I can only give SIAM the highest praise for a series of simulations that have given me a great deal of pleasure.

Finally, how about a simulation based on the Southern Region? East Croydon station, about 1984, with the Gatwick Express and the diesels to Oxtead? ■

SPECTRUM ON LINE.

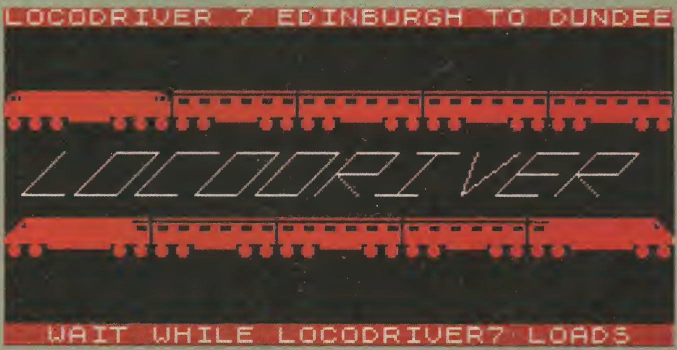
The humble Spectrum does well in the railway stakes. Greenup Software in Carlisle has produced a full range of driver simulations, traffic controls and depot control games.

All are priced at under £10 and represent tremendous value for money although it must be said that the Spectrum's 'blocky' displays don't exactly make for stunning views from the cab in the driver simulations. The main constraint on the Spectrum is its memory, but these programs show what can be done in a limited space with some elegant programming.

The rail traffic control programs allow you to take charge of all movements in your chosen scenario over a given period of time. *Rail Rovers* in East Anglia, Scotland and North America allows you to try and cover all the track in a given area by using the timetables. Timetable games, an Inter-City 125 card-game, and *Locospotter* programs let you take a hand at everything on the railway.

The driver simulations will be the programs that initially attract the casual train buff, with the chance of moving a train along hallowed tracks.

But it is here that the Spectrum is really stretched beyond its limit. It cannot provide a realistic display of the countryside moving by and is limited to a few details. However, the gameplay and the skills you have to learn first, more than make up for it.



```
LOCODRIVER 7 EDINBURGH TO DUNDEE
LOCODRIVER
WAIT WHILE LOCODRIVER7 LOADS
```

- **Rail Traffic Control Simulations (£9.95) Available for:**
Exeter, Kings Cross, Rugby, Birmingham, Crewe, Doncaster, Leeds, Reading

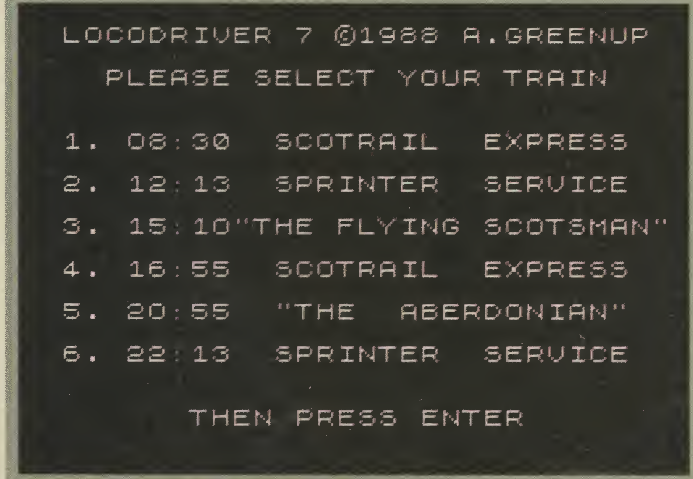
- **Sheds (£8.50) available:**
Finsbury Park, Old Oak Common

- **Miscellaneous: *Trackbasher* (£8.50), *Anglia Rover* (£8.50), *Freedom of Scotland* (£7.50), *Amtrak Rail Pass* (£7.50), *1960s LocoSpotter* (£5.95)**

- **Driver Simulations (£5.95 unless otherwise marked).**
Leeds-Settle-Carlisle* (£7.50), *Kings Cross-Edinburgh, Liverpool St-Norwich, Euston-Glasgow, Paddington-Cardiff, Paddington-Exeter, Edinburgh-Dundee, Waterloo-Bournemouth, Settle Carlisle, Glasgow-Dundee, St Pancras-Leicester, Charing Cross-Ashford

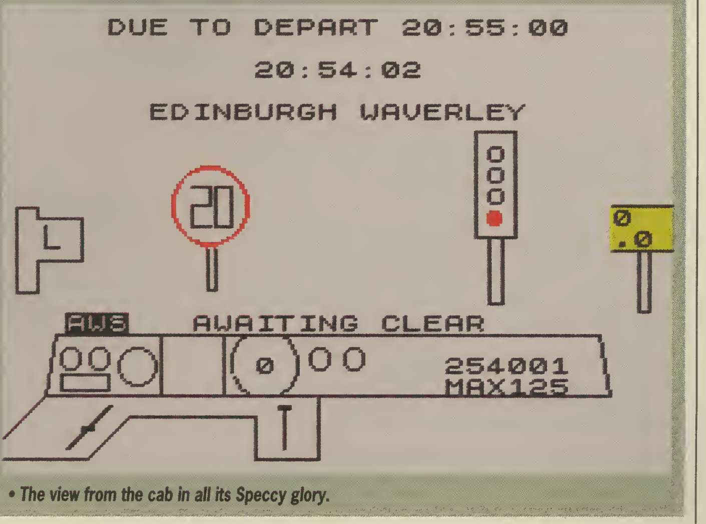
Greenup Software is on 0228 23557.

***Evening Star* and *Southern Belle* are also available for the Spectrum (See CPC panel above).**



```
LOCODRIVER 7 ©1988 A.GREENUP
PLEASE SELECT YOUR TRAIN

1. 08:30  SCOTRAIL  EXPRESS
2. 12:13  SPRINTER  SERVICE
3. 15:10"THE FLYING SCOTSMAN"
4. 16:55  SCOTRAIL  EXPRESS
5. 20:55  "THE  ABERDONIAN"
6. 22:13  SPRINTER  SERVICE

THEN PRESS ENTER
```

• *Choose your engine for the run ahead.*



```
DUE TO DEPART 20:55:00
20:54:02
EDINBURGH WAVERLEY
AWAITING CLEAR
```

• *The view from the cab in all its Speccy glory.*

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CIRCUIT CITY

A bundle of extra peripherals may put a strain on your computer's already hardworking power supply. Keith Pomfret shows you what you can do to avoid it curling up its toes amid a cloud of acrid smoke...

When you buy a computer it has a power supply that is designed and tailored to its requirements. There's no hard and fast rule as to the needs of a computer and its peripherals, so different manufacturers choose different ways to power their machines.

Computers such as the PC, ST and Acorn A3000 have their power supplies on board, the Amiga, C64 and Spectrum get theirs from a seperate unit and Amstrad CPCs and PCWs have their power unit in the monitor casing.

Common reasons for needing to replace a power supply are:

- The original unit failed. If this is the case, have the computer checked by a competent person to make sure that a faulty micro wasn't the initial cause of the power supply failure.
- The machine was upgraded and more power hungry parts/peripherals added.
- The machine was bought cheap/end of line/second hand and in\complete.
- An otherwise compatible machine brought was from another country where the power supply is different. (ie the US where the supply is 110/120v)

For instance if you have a machine with a separate power supply, replacement is generally as easy as finding a suitable power supply, casing it and replacing the old one. If the power supply is in the case or the monitor, you have the constraints of size to deal with too. Your replacement must fit where the old one came from and must be ventilated sufficiently, as must any power supply.

If your machine is still within its guarantee period, don't attempt to replace the power supply. Have the work done as part of the warranty. If you replace anything or open anything up you will be in breach of your guarantee.

OPEN UP

Computers run at low voltages; 12 and 5 volts are fairly common, and a computer prefers its volts to be DC rather than AC.

As the three pins in the wall flow with 240 volts AC, the power supply of your micro has a couple of jobs to do. First it must take the nasty 240 volts and reduce it to a more manageable 12 or 5 volts. After this transformation, the AC (alternating current) must be tweaked to turn it into DC (direct current). Turning AC into DC is known as rectifying, and, as well as the rectifier, the computer normally has a circuit to protect it from the fluctuations that can sometimes occur in mains power.

TAKE CARE

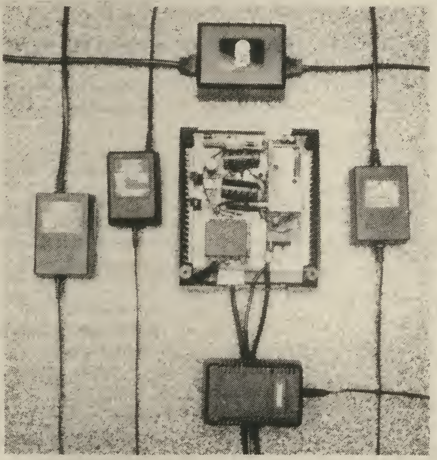
This project involves fiddling with the mains power supply. Mains power can and does kill. Don't let it be you.

If you are replacing with a larger or more powerful power supply, take into account ventilation and the proximity of parts that may be damaged by heat. Be prepared to fit a cooling fan if necessary.

Don't consider replacing a power supply unless you know its rating

In order to add or replace a power supply, you need to know what the original supply was rated at. The parameters that you need to know are as follows:

- **What amperage the original was rated as**. Current is measured in amps and in order to assure suitability, the new supply should be capable of providing at least as much current as the original. If the original was rated at 1 amp, it would be OK to use a supply rated at 1 amp or above, but nothing below 1 amp would be acceptable. Unless you are adding power hungry peripherals, it is a good idea to stay as close to the original current rating as possible. If you are adding a known drive, board or peripheral and you know its current rating then you should take this into account when changing the power supply.



• Power supplies galore: make sure you choose the right one.

- **What voltage is required**. A power supply may be required to provide different voltages such as 5 and 12. Make sure that the replacement supply you intend to use has the right voltages. If in doubt double check.
- **Check the cooling arrangements for the original**. Transformers get warm and if you're adding a larger one or a cooling fan, then more attention to efficient convection may be required. If you are fitting a non-original power supply to a machine internally, you have the added complication of placing a potentially hotter lump next to delicate electronics.

WE WANT INFORMATION

The first place to look for information about the power supply is in the manual. if you're lucky there will be a perfectly lucid section explaining the power, voltage and current. If you're very lucky there will be a pin-out diagram or schematic, explaining which bits have how much of what running through them.

If there's no manual, or the manual conforms to the international standard that dictates computer manuals must tell you nothing in the longest technical words available, you'll have to try stronger medicine. A phone call to the manufacturer/distributor/user group etc can often pay dividends. Every company has some troglodyte sitting in a corner whose love in life is to chat at great length about technical things. The only problem with this is that many large companies protect these useful sources of information behind walls of "He's in a meeting" telephone operators.

If all else fails try to find another machine of the same sort, and if its owner isn't aware of the required information then use a meter to check voltages etc. This is an 'if all else fails' remedy and must be saved until last. It isn't necessarily accurate and, unless you're at home with an AVO meter and a competent electrical DIY hobbyist, you should avoid it like you'd avoid a Sinclair C5.

UP TO THE ELBOWS

Once you know the parameters of the power supply you need you can buy one. A good electrical supplier such as Tandy may have the parts that you require. If it's unusual, there is the Maplin catalogue. Total cheapskates could hover around the jumble at boot sales, computer and radio rallies, or in the racks at the back of that shop in every town that sells those wonderful 1950s radio valves.

Assuming that you find the power supply of your machine's dreams, you can go about the business of replacing it. At simplest, it will be a two minute job with a screwdriver. At worst it could be hours of a fiddle, with hot solder and delicate wires.

If there is anything at all that you aren't confident with, leave the job to an expert. A way of deciding whether the job is within your capabilities, is to see if you can explain it to a non-technical person in such a way that they would be competent to attempt it. If you can't, then it's time to curl up with a couple of manuals and techie books.

If you have sufficient comprehension of the project to impart the details to others verbally, you stand a good chance of succeeding. The project involves mains electricity, so a modicum of personal care is in order too, not just in the job itself but in its result, as a badly wired impliment could bite the user at any time.

Finally, take your time, test and check everything and take care. ■

SOURCES

Maplin
Catalogue from W H Smith or phone 0702 554161

Tandy
A branch in most major towns or phone 0922 710000

Any local electronics shop
(where you can get good advice as well.)

Computer/radio jumbles and fairs but be careful what you buy, unless you know what you're looking for.

TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

■ TIP! MIDI music

I read somewhere that MIDI interfaces would only work if they were opto-coupled. Being the sort who likes to make my own things I researched all of the connections and I've made a hard-wired MIDI interface that works through the serial port of my PC AT (yes folks, real IBM) and works perfectly with proprietory MIDI software.

The point that I am making is that I had no need to opto-couple anything and it all works perfectly. I enclose the circuit diagram...

Neil Adams, Bracknell

...And I've screwed the diagram up and consigned it to the bin. The point of opto-coupling MIDI interfaces isn't anything to do with necessity, it's to do with safety. Your interface will not protect the internals of your computer from power surges and/or problems within the MIDI network. The purpose of the opto-isolator in a MIDI circuit is to stop problems occurring in one machine causing damage to another – like yours, for instance!

Risking the £1,000 plus value of your AT to the unpredictability of networking is crazy at the least and if it were someone else's PC it would be nothing short of criminal.

It's a pity that you've taken this route. The circuit diagram that you provided could have been simply adapted using a couple of transistors, an opto-coupler, and a pair of matched resistors.

It looks to have expansion box possibilities too. May I suggest that you go back to the drawing board, give it a dose of thinking about and come back with a safer and more versatile MIDI interface. You obviously have the ability. Why spoil the ship for a ha'porth of tar?

■ HELP! MIDI identities

I have been collecting MIDI instruments since the early 1980s and have a collection of 23 keyboards, guitars, modules, etc. The eventual plan is to have a working museum of computer controlled music.

I recently bought an Amiga B2000 to use as a controller for a 'live' demonstration area and I'm pleased with the software that I've bought to use as a real time sequencer (a Steinberg).

I want to be able to demonstrate the individual manufacturer IDs embedded in the MIDI code but although there is plenty of information on how it works, I have been unable to find the hex code that identifies the following manufacturers: Yamaha, Roland, Korg, Oberheim and Moog.

Noel Bragg, Walsall

The MIDI System Exclusive codes for the manufacturers that you listed are: 43,41,42,10,4. All of these are hexadecimal numbers. The use of the System Exclusives allows large amounts of machine specific sequencer and voice data to be included in a MIDI network where the products of more than one manufacturer are used.

When you get your museum up and going be sure to let *Express* know so that we can send down the team to give it the once over.

■ Help! Amiga family

I was going to buy an Atari ST or a Commodore Amiga and had almost settled on the ST because of its faster speed, until an Amiga lover started to explain that his computer had dedicated chips and that they could more than make up for the slightly slower computer. He mentioned Agnus, Denise, Paula and Gary. Please tell me what these do and what is this DMA that the Amiga is so good at.

Don't give us a lecture on how brilliant the Amiga is. I am beginning to realise that on my own but I could do with a simple explanation about the chip set.

Trevor Warren, Newport

- Fat Agnus is the heart of the dedicated chip set and contains the Blitter (Block Image Transfer). This clever little sod can shift lumps of code around at the rate of 16-bits in around 270 nano seconds. It can shift lumps of colour around in fine order and is also pretty whizzy with line drawings. The famous graphics copper can be found in Agnus too.
- Denise is the controller that keeps all of the images on the screen in check. It handles the 4,096 colours, sprites and bit plane data. It also looks after the on-screen pointer and mouse controller.
- Paula is to sound what Denise is to pictures. As well as looking after all the lovely samples etc, it contains a DA converter and controls the whole show in glorious spatial stereo.
- Gary is a complex gate array and the little brother of the chip set, and keeps a wary eye on I/O, interfacing, ports and passes data to all peripherals.

■ HELP! Serious stuff

I've taken out wave after wave of hostile pixels, banged the trident on the ground to summon the magic, won the World Cup, flown planes, driven cars and generally worn out half a dozen joysticks.

But it seems a pity that this is all I have to show for the £600 plus that I've spent on buying my Amiga and then upgrading it to double drive and one megabyte of memory.

My wallet itches in my trousers again and this time I want to spend it on a printer and some serious software to take advantage of the abilities of this fine computer. I'd also like to get into animation and MIDI eventually, but for now I need just a program to write letters and estimates, and one to produce advertising flysheets.

Your ideas please!

Nick Hardman, Boston, Lincs

First, if you're going to keep customer details on a computer, you may need to register under the Data Protection Act. Once you've sorted this out, you can trek off to buy your software.

For your letters and estimates you need a word processor. My personal favourite is *Protext* but there are several that fit the bill. They vary in cost and features but a call to any of the firms listed below should answer your questions:

Protext V5, Arnor, 0733 68909, £149; *Transcript*, HB Marketing, 0753 686000, £39.95; *WordPerfect*, Sentinel, 0932 231164, £230; *Scribble* , HB Marketing, 0753 686000, £49.95; *Prowrite*, HB Marketing, 0753 686000, £139.95; and *Pen Pal*, Data Liberation, 0983 405600, £129.95

■ HELP! CodeMasters CD disk problems

I won a CodeMasters CD games pack and, using the family MIDI system, was able to load and run the programs on my eight-bit wonder. For my birthday I received a portable CD player and for some reason or other it won't work. It plays music alright but won't look at the games CD. It isn't the disk because it still works from the MIDI system.

My dad has bought an Opus PC and I want to use the CD player to connect to it and use some of the CD-ROM disks from school. What sort of a lead do I use?

Martin Hailey, Uxbridge

When the CD games pack was designed, it wasn't realised that some CD players take short cuts in the way that they process sound. Instead of having two separate channels for stereo, some CD players have only one channel and swap between left and right channels so quicklyt that the human ear can't detect the change.

To the 'analogue' human ear, this is perceived as stereo. To the more perceptive digital computer, however, this is read as a fragmented, senseless mishmash, rapidly swapping from one signal to another.

Which, I hope, explains why some CD players will handle the games pack and some won't. Unfortunately there isn't any modification that you can make to your portable CD player that will persuade it to run your games pack, so you'll have to stick with the MIDI system.

I'm afraid that the prognosis isn't good for your home made CD-ROM. While the platten and laser scanning mechanism of a CD player and a CD-ROM are similar, the control is different.

I'm afraid that the elegant (but expensive) answer is to buy a CD-ROM player with a headphone and/or audio signal output. This could cost you upwards of £500 but you'd have a quality CD player that would do both jobs. Maybe now's the time to tug the parental sleeve in time for Christmas. (NEC do a particularly nice little beast that resembles a portable CD player.)

To produce good ad flyers you'll need some sort of DTP (desktop publishing) package. The choice is as follows: *City Desk*, Precision 081-330 7166, £150; *Shakespeare*, Cloudhall, 0604 231211, £99; *Publisher's Choice*, HB Marketing, 0753 686000, £99.95; *Pagesetter 2*, HB Marketing, 0753 686000, £59.95; *Professional Page*, HB Marketing, 0753 686000, £199.95

The choice is yours. If I had to take on board the same tasks as you I would probably opt for *Protext* and *Page Setter 2* – £250 worth of good value. Remember though, that the quality of your output is solely dependent on the printer that you use.

A dais wheel printer is out, so it's got to be a dot-matrix, inkjet or laser for the jobs that you wish to do. Don't buy a printer without seeing examples of the work it can produce, particularly the type of work that you will need it for. If you are using it for advertising, this work will be the first impression that people get of your company, and this could make or break your business. So spend what you can afford but remember that the printer is an important investment and any penny pinching is a false economy.

■ HELP! Infected

You spend far too much time answering the queries and questions of people who only use their computers for games and entertainment. You should ditch these lame ducks who can't or won't read the documentation that comes with their micro. There are readers who require your services to answer sensible questions about proper computers.

If one of your tame lame ducks has a problem with his Spectrum and can't solve it, the worst possible scenario is that he cannot play a game. If I have a problem, it may cost my firm money. So it is your moral duty to answer my questions and not theirs.

My company has several PC computers with hard disks. As an economy we swapped software with another company in our group and this software has infected our machines with some sort of virus. The firm who supplied our sister company with the programs has refused to help and our own computer supplier says that we must call in a consultant (Dr Soloman) to sort the problem out.

I have no intention of paying thousands of pounds to some consultancy when you exist to do the same job. You must reply within 7 days.

Brian Murray, Address withheld to save him embarrassment.

And the enclosed envelope didn't even have a stamp on it!

Not content with alienating a good proportion of our readers with his offensive comments, this man admits to stealing software by copying it, has the affrontery to complain because the company from which he stole it won't help – and then expects *Express* to sort out his problems. It fair takes your breath away.

I don't think that anyone deserves a virus but, Mr Murray, you come damn close. I suggest that you put your hand in your pocket and pay the necessary readies to the nice Dr Soloman. Then, while he's disinfecting your system, take the time to ponder on the wisdom of stealing software.

■ HELP! More MIDI

My sister and I learned the pianoforte the traditional way, with a spinsterly travelling teacher whose opinion of electricity was that it was a pretty poor substitute for the gas mantle.

In this environment we both attained Grade Six but felt that we were missing the electric revolution in music. We are both in our twenties and have taken an interest in computers to the extent of purchasing an Atari 1040 ST. I have quite taken to programming, and Ellen my sister has managed some rather clever pictures and documents.

At the rear of the 1040 there are three five pin DIN connectors of the sort found at the rear of stereo equipment.

They are MIDI ports according to the documentation. Our local computer shop provided a MIDI sequencing program and we obtained a Yamaha keyboard. I managed to get the sequencer to emulate a multiple-track tape recorder but we would like to learn more about it.

Please could you recommend some suitable books for two music literate MIDI illiterates?

Paul and Ellen Stanton, Wisbech, Cambs

A good read and an ideal textbook for beginners is *MIDI Basics*. This simple to follow 60-page A4 paperback is worth its weight in golden oldies and can be ordered as ISBN 0-7119-0952-0.

Other interesting titles are *MIDI for Musicians* (120 pages ISBN 0-7119-0822-2) and *Synthesiser Basics* (160 pages ISBN 0-7119-1022-7)

■ HELP! QL connections

I bought a Sinclair QL at a computer boot sale because a neighbour has one and said that it's a brilliant computer. Unfortunately, he works in the Middle East and may be some time returning with his fountain of knowledge.

One of my son's schoolfriends claims that the QL has the same insides as an ST or Amiga. Is this true? However, my first problem is that I have the machine but no manuals. So I don't know what connects to what, or how, or even if I need a monitor or whether a TV will do.

It would be good to have it up and running before my neighbour returns. (One up for the little woman against the male expert.) Help, if you please.

Susan Alexander (Ms), Welwyn Garden City

The QL shares the same family of central processor as the Amiga and ST, but that's as far as it goes. In simple terms, if you put the same engine in a saloon, limousine, van and sports car, you would be using the same motive power but for a number of quite different vehicles.

The QL uses the Motorola 68008 processor which is the version of the 68 series with an eight-bit data bus. The basic Amiga, ST and Apple Macintosh use its big brother the 68000. This is essentially the same chip but with a 16-bit data bus instead of eight. The 68 series has 32-bit internals, but only the top of the range chips such as the 68030 have the full 32-bit wide data bus.

To the casual computer user, all of the above is techno-garbage and not of a great deal of interest or use. To the programmer it's a different matter. Processors within the same family have similar architecture, so while the rest of the computer's architecture may be different, the machine language is essentially the same. This allows a competent programmer to 'port' programs from one machine to another.

To help you connect your QL to the outside world, here are the connections you will find on the back. You can use a monitor or a TV, but a monitor will give you a better picture.

From left to right looking at the rear of the QL:

1 Network (for connection to the QL network)
2 Network (as above)
3 Power (QL power supply)
4 RGB (connection to a colour RGB – red/green/blue – or mono monitor)
5 UHF (direct connection to the aerial socket of a TV)
6 SER1 (RS232C serial port)
7 SER2 (as above)
8 CTL1 (Joystick 1)
9 CTL2 (Joystick 2)
10 Blanked socket for ROM/EPROM software.

If you decide to use your QL with a TV set, you'll need to tune one of your spare channel buttons to the frequency the QL sends to the TV. This is approximately Channel 36. When you've tuned the TV in to the QL, connected everything together and switched on, you should see the QL copyright screen. This looks something like this:

```
F1  Monitor
F2  TV
© 1983 Sinclair Research Ltd.
```

Now that you have a working QL, you'll be able to send nicely formatted letters to *Express* using *Quill*, the bundled QL word processor – so throw away the old Remington Typewriter. A word of warning however. Like everything else designed by Uncle Clive, the QL doesn't have standard anything and to connect a printer to your QL you'll need a serial printer. That or an interface to make your QL and parallel printer talk to each other.

For all things QL, contact EEC Ltd which not only supports the QL but still sells the wondrous beastie. At the last count there were about 385 brand new QLs left in stock.

• The much admired and late lamented QL – although EEC still have a few lhundred left.

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HAS YOUR MACHINE REACHED ITS LIMIT?

No one doubts the intrinsic power of today's home computers. Compared to the machines of only a few years ago they offer more megahertz, megabytes and megaFLOPS than anyone thought likely or necessary. But has this power made the programmers lazy?

When you have 16 or 32-bits of processor at your disposal it's all too easy to produce a good enough program without stretching the envelope.

On the other hand, could hardware limitations be stifling programmers, stopping them producing their dreamed of supergame?

Is there more to be squeezed out of the hardware of these machines or are they already at their full potential? To find out *Express* gathered together a quartet of experts – Ken Coumarin, Jason Holborn, Mike Hardaker and Neil Jackson – and asked the vital question: Are today's machines running at full power? ➤

Acorn Archimedes

First launched: 1987

BRITISH BROADCASTING CORPORATION
MICROCOMPUTER SYSTEM
Acorn
3000

Once upon a time, not so long ago, Acorn unveiled 'the most powerful personal computer in the world' – it even claimed it would give more power to your elbow! Nearly four years on and the machine is still going strong in no less than four guises now, the A3000, the A400 series, the Unix-based range and the brand new, top end, A540. The ARM 3 has appeared and both MemC and VidC have seen upgrades.

So, the hardware is doing well enough, what about the software? Are the programmers making use of this world-beating technology? To address this question, I would like to split the rather general term 'software' into some rather easier to manage chunks.

In the world of business software, some really rather impressive steps have been made. Spreadsheets are now bigger and faster than ever before, *Pipedream* and *Schema* to name but two. The range of functions available and the sheer speed of recalculations can make these very valuable tools.

With desktop publishing, companies such as Beebug and Computer Concepts have produced DTP packages to rival the best available on the Macintosh. A lot of the credit for this must go to Acorn itself for producing such a high specification font management system. Full WYSIWYG outline fonts must be one of Acorn's best achievements. However the lowly word processor hasn't kept up with this trend. Perhaps the rather basic needs of a 'type and print' system have been neglected – I still write all my articles using *View* running under the 6502 Tube emulator!

The range of educational software that is currently available is certainly an improvement over the rather rehashed BBC programs of a year or so ago. The Archie's sound and graphics capabilities should make the machine a real part of the classroom. Companies like 4Mation (*Jigsaw, Poster*) and Sherston (*Connections, Numbers*) are now producing some very effective educational packages.

Then there's the rather harder to define 'utility' software including comms packages, of which *ArcComm* and *ArcTerm 7* are very impressive examples, and emulators. Acorn's own PC emulator is OK, 65Host is pretty good and the Speculator (when it appears) is positively amazing! Most of what is available is good or getting better. The release of RISCOS has given everybody a standard to work towards which most people seem to be adhering to.

Of course it didn't take long for the more artistic software houses to write 'the ultimate art package'.

They still lack that certain something to put them in the league of programs on other micros

Unfortunately I still don't think any of them have come up with anything worthy of this title.

Clares gets the prize for the first with *Artisan,* but even in its current incarnations, *ProArtisan* and *Artisan II*, it suffers from rather two many quirks and 'creeping features' and hasn't really got enough attention to detail. Nevertheless, *ProArtisan* is one of the better packages available.

Rivaling it are Minerva's *Atelier* and Tap Consortium's *ArCol.* Again, both of these have some very good features, notably the colour menu in *Atelier* and the distort function in *ArCol.* But they still lack that certain something to put them in the league of *CyberPaint* and *DPaint 3* on other micros.

On the other side of the coin, applications such as 4Mation's *Poster* and Ace's *Euclid* series are really showing what the Archimedes is capable of.

Another source of software is, of course, public domain. Here, the standard is generally very high, with programs ranging from disk formatters to ray tracers such as *QRT.*

Unfortunately the Archimedes is rather sadly lacking on the games front, after a promising start with *Zarch* (OK, not much of a game, but still one darn impressive piece of programming) the standard of games has remained pretty mediocre. There have been some very good games written, but these have been rather few and far between. *Pacmania, Rotor, Jigsaw, Fireball II, PipeMania, Manchester United* and the Magnetic Scrolls adventures immediately spring to mind. More recently, the 4th Dimension has produced some impressive looking games, *Apocalypse* and *Nevryon* being about the best, but as with the art packages mentioned above, they don't seem to have that final polish and shine that most 16 bit games have these days. Perhaps the next generation of Archie games, such as *Wonderland,* will have more to offer.

So what are programmers doing with all this power? Well, as far as I can tell, the most talented Archimedes programmers seem to spend all day every day writing demos! Put it this way, how many ball bouncing, star swirling, text scrolling, mandelbrotting, music playing demonstrations have you seen in the last six months?

Personally, I gave up collecting them a while ago as I couldn't afford the expense in blank disks! Why don't these people calm down for a moment or two and knock together the ultimate game? Surely, you could fly a ship through those stars or shoot at some of those spinning balls.

Unfortunately, the reason is a rather practical one and it applies to all branches of software writing, not just games. That is, in a word, money. Or, to put it in less blunt terms, 'market satisfaction' – believe it or not, not everyone is in this just for the cash!

It is very hard to justify spending a year (or whatever) writing a piece of software on the Archimedes and have it sell two or three thousand copies, when over the same amount of time one could write the same program on an ST, Amiga, Mac or PC and sell ten times that amount. In general, what software is written is of good quality (with one or two exceptions) and is using the capabilities and power of the Archimedes, there just isn't enough of it yet!

What will the future hold?

The area which really stands out as needing a lot more attention is games.

Despite the Arc's super-fast RISC processor which renders dedicated chips such as the Amiga's irrelevant, programmers still have not managed to produce a single shoot-'em-up to come close to the likes of *Xenon II* on the other machines.

There is no hardware reason for this; the Archie offers superior graphics and, more importantly, a chip which can shift the graphics data about at a phenomenal speed – just look at the real time video capabilities of the new Arc. The blame must be laid fair and square at the programmers' door. To be blunt, they are just not good enough.

Most cut their teeth on the BBC micro, and it appears that the jump from 6502 to ARM assembler is not easily made. If the Archimedes games houses could persuade some of the Amiga and ST programmers, such as the Bullfrog team or the Bitmap Brothers, to work on Arc software then we might really see some games which would blow Amiga owners socks off!

Commodore Amiga

First launched: 1985

Is the Amiga being pushed to its full capabilities? Many seem to think not – take a quick glance through the *Express* letters pages and you're sure to find letters from disgruntled users complaining about the quality of some products. Could it be that developers have yet to harness the power of the Amiga?

You could argue that much of what has already been achieved with the Amiga has surpassed the expectations of the original developers. After all, the Amiga was originally designed as a state of the art games console – it was only in the later stages of development that its obvious potential as a desktop micro was realised.

However, despite the intentions of the original developers, the fact remains that the Amiga is capable of far more than just playing games. When judging a machine, it is often best to ignore what the machine manufacturer sees as a machine's limits, and judge instead the machine's potential as viewed by third party developers.

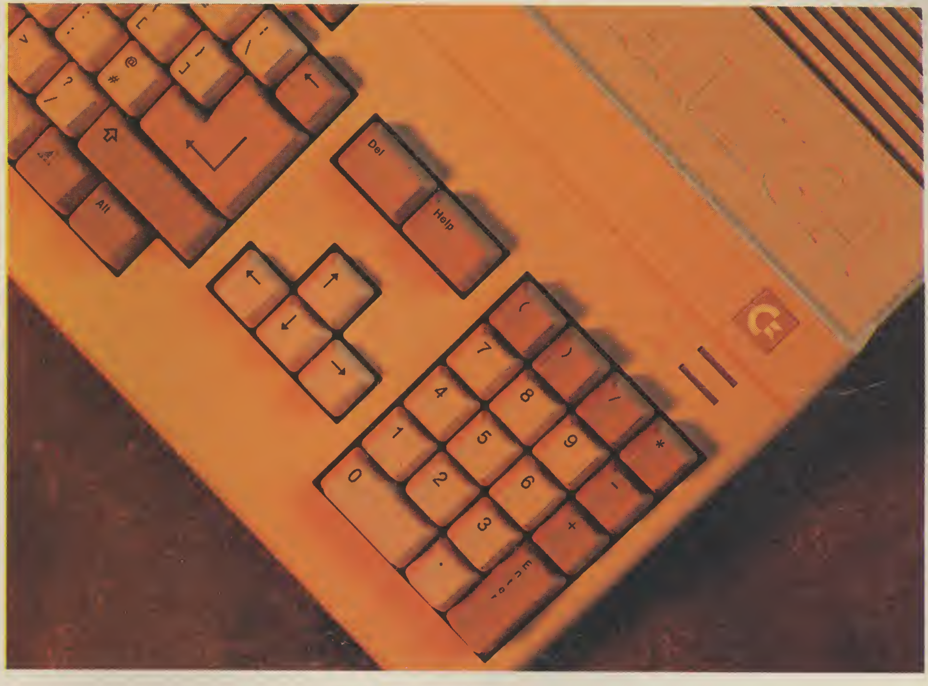
If there's one thing the Amiga does best, it's playing games. But are the games we have today nothing more than a taster of things to come? After all, it took programmers three years to fully harness the power of the Amiga's predecessor, the CBM 64 – surely the same should apply to the Amiga?

In the days of the 64, games programming was still a relatively new profession, and experienced games programmers were few and far between. In most cases, it took several years for the skills of programmers to mature – It was not until then that they were able to exploit this knowledge.

With the latest generation of 16- and 32-bit machines, programmers have brought across much of what they have learned from the 8-bit machines, allowing them to learn the technicalities of these new machines far quicker. After all, although the hardware itself is far more complex, the principles behind hardware level programming remain very much the same.

This has allowed programmers to exploit the power of the Amiga far faster. If the Amiga had been launched way back in 1981, then it is almost certain that programmers would have taken far longer to achieve the results that we see today.

In fact, many programmers are starting to feel held back by the Amiga. For one, the Amiga processor just isn't fast enough, but by far the most common complaint is the lack of memory. Graphics and sound samples soon swallow up RAM, often leaving the programmer with very little room for the actual gameplay itself (*Shadow of the Beast* is a fine example of this). Many would like to see at least a megabyte of chip RAM for graphics and sound, with a further megabyte of fast RAM for programs.



One area that isn't being exploited enough is that of virtual devices. The Amiga hardware allows hard disks and floppy drives to be used just like RAM disks, allowing game data (graphics, sound and so on) to be pulled in without interrupting gameplay. This way, programmers could overcome memory constraints. So far, only the Sales Curve's *Ninja Warriors* has used this system. If more games programmers were to use it, the size of complexity of Amiga games could be increased substantially.

Hitting the limits

The miraculous things which programmers and third party hardware suppliers achieve with the Amiga cannot fail to impress, but the is a limit on much of their work, and that limit is what makes the Amiga unique in the first place – the custom chips.

The chips which handle the Amiga's graphics and sound are still stuck at the same speed as they were when the machine was launched, even in the new Amiga 3000 series. To get still more out of the machines Commodore needs to look at upgrading those chips.

Dare to be gorgeous and unique. But don't ever be cryptic or otherwise unfathomable. Make it unforgettably great." Who can ever forget those immortal words? When R J Mical designed Intuition, he insured that it was so flexible that it could easily be tailored to look and perform precisely how a developer wanted.

But if Intuition is so great, why do we still have to put up with developers slagging it off? Generally speaking, it seems to me that developers just aren't bothering to put in the effort to construct a decent user interface. These developers then turn around and complain that Intuition looks unprofessional.

If these programmers are not prepared to put in the required effort, then they have only themselves to blame when their applications look unprofessional. OK, Intuition requires a whole lot of work to achieve decent results, but don't slag it off to hide your own laziness.

If you want an example of what Intuition is really capable of, just check out programs such as *Pen Pal*, *DigiPaint 3* and (in particular) Gold Disk's *Advantage* spreadsheet.

It seems to me that the quality of Amiga applications software isn't a problem at all; in fact, much of what is available can match just about anything available on other machine. What really lets some Amiga applications down is the quality of its implementation and the lack of proper testing – how many times have you found a bug after just a couple of hours of playing with a new package?

There's so much the Amiga has to offer the applications programmer, but much of it is being wasted – for one, the Amiga's multi-tasking capabilities haven't even started to be used to its full. A-Rexx (which is built into OS version 2) is a step in the right direction, but there's still a long way to go.

The Amiga was designed to be open-ended, but surely no one could have imagined the power and diversity of add-ons now available to Amiga owners? With such devices as '030, '040 and even Transputer cards now available, complete with 32-bit RAM and ultra-fast maths co-processors, I think it's safe to say that hardware manufacturers are making the most of the Amiga. If you've got the money, you could speed a basic 7.16MHz Amiga up to a whacking 50MHz – that's over seven times faster than the machine's original design speed!

These manufacturers are starting to do things with the Amiga that the original designers never thought possible – quite recently, Commodore engineers were amazed when KCS were able to build a complete PC emulator on a card which fitted into the RAM expansion slot on the 500. With such devices as NewTek's Video Toaster and the fabled Mandala system due for release, it makes you wonder how much further Amiga hardware design can go.

The quality of Amiga applications software isn't a problem at all

It's always been true that developers know more about the insides of a computer than the manufacturer itself, and this certainly seems to be the case with the Amiga. Developers are now producing products that push the Amiga further than Commodore or even the original Los Gatos development team ever thought was possible.

Many seem to think that the Amiga's gone as far as it can, but the developers are a cunning and resourceful lot. They may appear to have pushed the machine to its limits, but who's to say that those limits can't be extended?

PC compatibles

First launched: 1981

In the PC's early days, the machine's hardware tended to develop apace with the software's capabilities. As PCs moved up from being 16K machines to having a 'massive' 64K of RAM as standard, applications programmers exploited the new-found freedom to write bigger (or less tightly-coded) programs. Hard disks released developers from having to write programs which would fit into 360K's worth of floppy; colour monitors introduced loads more possibilities. Microcomputer programmers were used to CP/M – it took time for them to find the limits of a DOS machine at all restrictive.

As late as 1986 there were few applications which could really push the 8088 and 8086-based PC's designed-in 640K RAM limit. Lotus *1-2-3* with a really meaty spreadsheet loaded up was a bit of a squeeze, but Lotus, Intel and Microsoft got together to form their Expanded Memory Specification (LIM EMS) and everything was hunky dory again. OK, so EMS is a bit of a bodge and you can only put data objects in it rather than programs, but that's what users wanted – *1-2-3* fitted fine, it was the spreadsheets which were getting too big.

Since then, the hardware potential has increased many times over. 32-bit 80386 and i486 microprocessors can access gigabytes-worth of extended memory – really useful stuff which can be used for programs as well as data. They have hardware memory protection which allows multi-programming and multi-threading (a program breaking itself up into several modules which run concurrently). They're quick enough to run really big programs or multiple programs. They're backed up with very large, lightning-fast hard disks, powerful graphics displays and even new architectures – Microchannel and EISA – which allow extra processors to be used for running specialised jobs.

However, most programs still use them in exactly the same way they used a PC-XT's 8088 microprocessor in the mid-Eighties.

PC software is not what it could be, but it is not the hardware which is holding the software back. Rather, it is the software holding the software back.

The problems come from the original PC's phenomenal success. Because so many people bought PCs in the early Eighties, there was a huge potential market for PC software which applications developers sought to exploit. Because of the huge applications portfolio which developed the PC became a more attractive purchase to more people, which made even more developers... and so on. People still buy PCs for this massive portfolio of software – all of which runs under DOS.

And DOS doesn't support satchels-full of extended memory, or multi-programming or multi-threading. It doesn't support the cleverer features of EISA and Microchannel. In most cases its fair to say that it just supports the features found on a clone of the original PC-XT (albeit one with a beefed-up RAM allocation of 640K, a bigger hard disk and a prettier screen).

Software developers mostly don't see 'power users' as having 386-based PCs which are rich in extra functionality. They see such people as having very fast XTs – after all, the operating system dictates that the PC is used as such.

The hardware is responsible for the PC's software not being able to develop further

There are operating systems which can exploit the extra functions of the new technology, of which OS/2 is probably the most complete example. Unix does a lot, but what's the point in running Unix on a fast PC when you can get a RISC system for the same money which will run it better? However, OS/2 doesn't have the same software library as DOS, so it is less attractive to users, so software developers don't write for it, so it's less attractive...

Considering how few OS/2-based PCs are actually out on the streets, its amazing how many companies actually do write for it. Anyway, the current release – 1.2 – of OS/2 doesn't even support the 386 family, being written to the instruction set of the 1984-vintage 80286; release 2.0 will have 386-specific code but that's been due Real Soon Now for a long, long, time.

Windows 3 offers an interesting approach to combining DOS with some of the features of a more grown-up operating system. Leaving the graphical bits aside, the underlying code of Windows 3 is pretty damn clever, and actually allows programmers to create applications which are bigger than 640K. It doesn't allow for multi-threading, however, and its multi-programming is pretty primitive when you get down to it. Also, Windows 3 retains the old 8086's segmented memory model, with its messy little 64K chunks, which doesn't exactly help the multi-programming as Windows 3 itself does all its main control work using just one segment.

In a sense, of course, the hardware is responsible for the PC's software not being able to develop further. The massive installed base of 8088 and 8086-based XT-class machines (and a good many of the ATs too, to be honest) ensures that Microsoft cannot jazz up DOS to exploit the bigger and better 80386 family. Its operating system has to run on all the PCs which are out there, within reason – current releases of DOS assume a 256K machine.

The hardware standard always ends up being the lowest common denominator. And the restrictions of the 1981 design which looked pretty generous back then – 640K is ten times what the average Apple II used and that was a big machine at the time – are crippling the forward movement of PC applications.

Maybe, as Microsoft and IBM undoubtedly intend, Windows 3 will act as a stepping-stone to OS/2. If that operating system succeeds in becoming the new business standard, we will see applications which can exploit the capabilities of 486 machines. If we're stuck with DOS, our programs will continue to run faster and faster but we won't see much more functionality.

Breaking the barriers

Windows 3 could finally see the end of the 640K limit which has hampered software for so long.

Genuine Windows 3 applications (as opposed to ordinary programs running in a window) have no pre-set limits when it comes to memory usage.

More exciting is the way that Windows and the high-end OS/2 operating systems appear to be growing together. At the moment translation between the two systems is not difficult, but soon Microsoft hopes that programs written for one will run unaltered on the other. This will mean that the operating system you use will depend on your hardware setup, but the programs will be the same no matter what.

In this way operating systems will be able to be tailor made for the specific hardware they are working on, with 486 processors, specialised buses and the rest all being put to the optimum use, without the programmer having to worry about it. A call to the operating system to, say, save a file will be identical on any system but the operating system will actually carry it out in the way which best suits the hardware.

In this way every system could be fully optimised.

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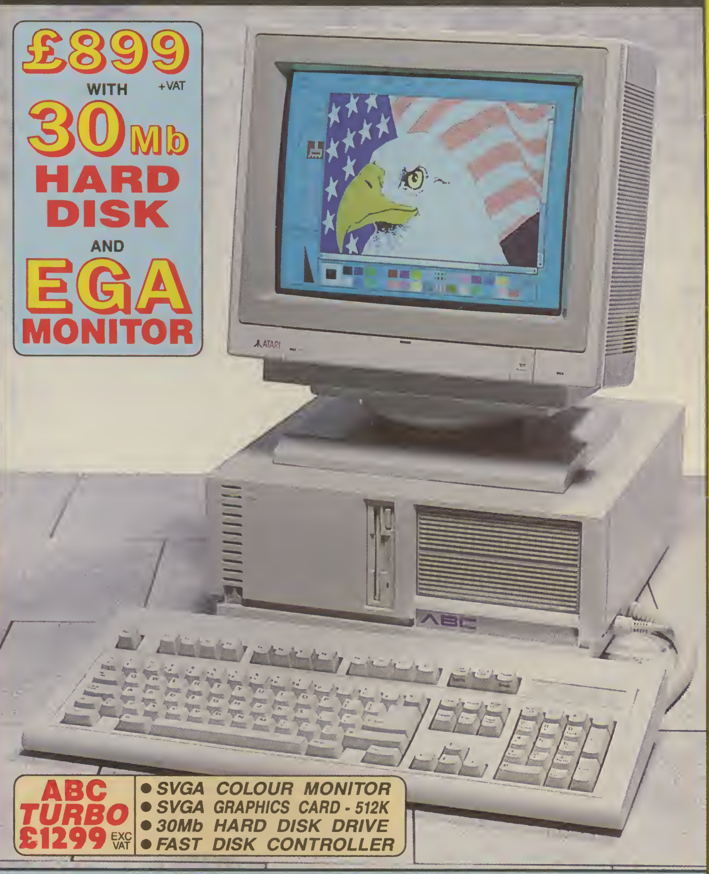

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Atari ST

First launched: 1985

Of all the computers that were part of the 16-bit revolution, the ST was always the most likely to reach hardware saturation. The reason for this was that it relied less on custom chips or a radically different operating system than its competitors. The guts of the machine featured some competent but unexciting design work, using systems and circuitry which were generally available at the time, or were nowhere near a quantum-leap in engineering. The sound-generating system, for example, using its archaic Yamaha YM2149 chip was perhaps the most short-sighted design decision, leaning so heavily as it did on its 8-bit roots.

On the firmware front, the ST was again handicapped at birth. In a bid to remain MS-DOS compatible and attract the business market, the Tramiel Operating System grew into a cumbersome and contorted means of controlling the hardware. Internal routines were almost entirely filing system and console-based, VT52-style, offering little to any programmer eager to push the system to its limits.

To gain desperately-needed speed from the machine, most games programmers ignored TOS and wrote directly to the hardware. Fine! Problem solved. The hardware itself was always capable of spectacular results at high speed, especially when running unfettered, without the millstone operating system to hold it back. But TOS has been re-written and modified more times than the bible, and each time hardware addresses and important system variables get moved around. To a program relying on TOS for its input and output systems, this is invisible, but it can spell instant death for any program talking directly to hardware.

The situation was worsened by the fact that Atari were never very forthcoming about new operating system details. Often the first a programmer knew of a new revision was when his software publishers phoned up to complain that his program wouldn't work on their machines (or worse still, on their customers'!).

Atari's standpoint on this issue was that programmers should always use TOS, and stick rigidly to the programming guidelines (which most programmers would give their back teeth to get an official copy of!). For spreadsheets, databases, word processing and the like this is no problem (and is actually to be encouraged), but for games, animation or any other complex, speed-hungry program where vast areas of screen memory need to be shifted around fast – forget it! It can't be done with TOS efficiently enough.

But does this mean that the ST is a spent force, or it's exhausted its potential? Not for a moment! The lack of full exploitation is partly due to the reasons above, but it's also a result of the general trend of software houses to reduce program creation time by writing for many machines at once. Cross-development systems, running on remote computers, are used to squirt new programs into target computers via the DMA port. Nice and quick for programmers, it does mean, however, that a program will often be written to appeal to the lowest common denominator – ie, it must work on the weakest machine and won't necessarily get the best out of the most able ones.

Many coin-op conversions are made in this way, and often the end results are less efficient (and therefore less fast) than they would have been if they were tailor-made ST versions.

But the factor which has held back full exploitation of the ST more than any other is its disk drive. In the ST's earliest (and probably most widespread) 520STFM configuration, it was fitted with a single-sided disk drive, capable of holding a maximum of 400K per disk. Several years down the line, this remarkable limitation has been purged and all STs now sell with double-sided drives as standard. But the tendency is for software houses to try to maximise their profits by squeezing products onto single-sided disks, thereby ensuring that absolutely every ST owner can run them (or so they think). This is a waste of space, as all disks have two sides! For the sake of a few extra production pennies double-sided drives are lying half-dormant, annoying owners (who have to keep swapping disks) and programmers (who have to cut programs around more to fit them in).

Until most programs are aimed at a basic 1Mb, double-sided system, rather than a 520K single, the ST will always fall short of its potential. In days of yore, virtually all 16K Spectrums became 48K ones, purely because most software was aimed at that configuration. Surely it would work in the case of the ST too?

Even in its new form, the STE, the machine has a long way to go. The addition of eight more greyscales on the colour palette gives Amiga-like colour possibilities. 4,096 colours is all well and good, but the original STE design specification stated that 32 would be displayable at once, rather than merely 16. Hopefully, Atari will see to this in a future revision. Meanwhile, add-on 4,096 colour boards are just beginning to show themselves, enabling old machines to increase their potential too.

Other unexplored paths include the STE's analogue joystick ports, which could hold the key to accurate simulations, with realistic movement. It seems incredible that for the ST (and any other 16-bit machine) the old, 8-way, video-console joystick is still the standard. Why? We should, en-masse, be experimenting with foot-pedal systems, rotating sticks, multiple fire-buttons, steering wheels and so on. With the STE more than any other machine, this is possible, and cheaper!

While it looks on the face of it that the ST has had a chequered history, and is perpetually undergoing some upgrade or other, it does still have a future. There is a good deal of life left in the machine, a whole host of unexplored areas which programmers have yet to get to grips with. When every disk you can buy is double-sided, plays sampled music while loading, uses the blitter and 4,096 colours (at once) and allows you to input data via analogue joystick, rudder pedal and voice-operated toaster, you can believe that the end is nigh! Until then, the ST is still an infant in a world where the adults can't decide which school it should go to.

Whither the ST?

The ST must be the machine with the most rumours of future products floating around it; the ST console, a RISC ST, hand-held ST. A fair few have turned out to be true as well, notable the Stacy laptop and the superfast Unix-toting TT.

For all this speculation of up-market products, the ST remains solidly down to earth in its appeal. It is the cheapest 16-bit machine you can buy and it has the best range of low cost business and games software. But the one thing the ST is not is at the cutting edge. It has yielded that ground to the Amiga and more especially the Archimedes despite Atari's investments.

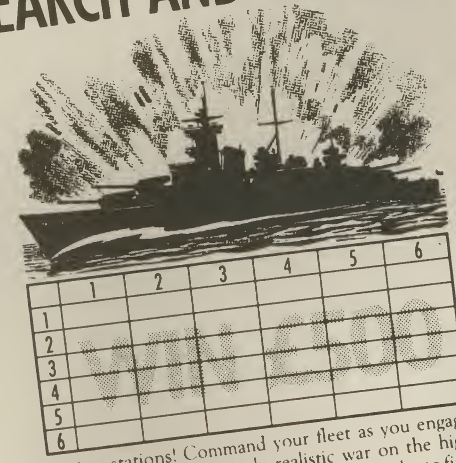
The ST range is, on paper, very strong. There is a CD-ROM player, a dedicated laser printer and planty of hard drives. Models are available with a 'professional' appearance with a separate keyboard. The laptop has features unique to itself and the TT offers the power of Unix along with ST compatibility. All of this stands up well against the Amiga, but somehow the Atari machines always seem to come off second best.

It seems that to a large extent the important thing is not the excellence of the hardware, or the quality of the software, but the percieved image of the computer.

The ST is slipping in the image stakes despite technical innovations and that is where the best is not being made of the ST's potential.

COMPUTERDIAL HERO FANTASY GAMES

SEARCH AND DESTROY



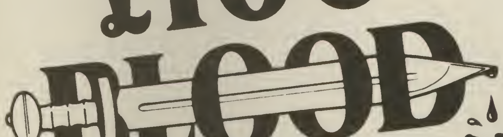
Action stations! Command your fleet as you engage the enemy in an amazingly realistic war on the high seas. You control where to aim and what missiles to fire.
Track your results with this grid.
Chief Commander of the Month wins £500.

COMPUTERDIAL

BATTLESHIPS

0898 800 880

£100 BLOOD MONEY



Hear the roar of the crowd as sword meets flesh, the clash of steel on bronze, the screams of victory or pain. You control every move as you face your opponent in a kill-or-be-killed battle to the end.
And each month £100 goes to the highest living scorer!

STEVE JACKSON'S

GLADIATORS OF THE ROMAN EMPIRE

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WAR·OF·WIZARDS

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SPELL COMBAT
by Ian Livingstone

Step onto your podium. Prepare for war. It's you against Yaztromo's school of wizards as you engage in electrifying spell combat.

Hear thunderbolts crash, fireballs erupt, monsters roar, and hellhounds snarl as you hurl them at your opponent. Will they hit their mark, or rebound back on you?

Prepare to cast your first spell now by dialling 0898 10 10 66 and let the magic begin!

DIAL 0898 10 10 66

£100 PRIZE

FIST
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FIST II
0898 800 879
TREASURE HUNT IN CASTLE RUINS

Calls are more expensive than ordinary telephone calls and should only be made with the permission of the telephone subscriber.
Calls cost 33p per min cheap, 44p per min other times (inc. VAT). Touch-Tone phones recommended. Computerdial Ltd., Guildford, Surrey GU1 4JU.

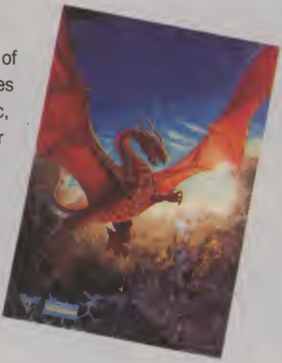
WIN!

CONSOLES, GAMES, PRINTERS, SUBSCRIPTIONS, DSK

THE EXPRESS 100th BR

"Look, it's our birthday, so go and get a few prizes to cheer the readers up. What with the winter setting in and all that." That's what the editor said. So, off I went in the hope of raising a couple of quid's worth of prizes for you. As you can see it worked. In fact, with over 500 prizes to be won, I should say that it worked rather well.

What is there to win? Read on and find out. Because so many companies have been generous enough to donate (that's right, donate for no money to you) prizes, I have decided to list the prizes in alphabetical order.



Active Sales And Marketing:

Active is one of those companies that you, the public, rarely get to hear about. It masquerades behind the names Thalion, Active Consoles, and a whole lot of other companies for which it does the marketing. Well, Active has decided to brighten up bedrooms country, nay, Europe-wide, with 20 signed, framed, art-printed (that's expensive y'all) copies of the *Dragonflight* artwork. Get your walls on the line for this one.

Burnin' Rubber

Amstrad

Here we go then, with a company you most certainly will have heard of. Good old Amstrad has seen fit let us have one of its GX4000 games consoles to give away. The console, that bears a striking resemblance to the updated *Star Trek* landing craft has more games coming out for it every month. So far you have *Burnin' Rubber*, *Batman*, *Switchblade*, *Klax, Fire and Forget*, *Crazy Cars 2*, *Tin Tin on the Moon*, *Tennis Cup*, *Batman 2*, *Robocop 2*, and *No Exit*.

Anco

You guessed it, *Kick Off 2* and *Player Manager*. But on top of those we also have *Turrican* and *Legend of Faergil*. Loads of copies of all of these in nearly every format you could conceive of; alright there is no Cray version, nor is there a copy for MSX owners, sorry about that. Still there are 25 copies of the footy sim to be won. The same for *Turrican*, and 10 copies of *Legend*. So get answering those questions now.

Cd's

This company has decided to leave the choice of game up to you. With £150 worth of games from its catalogue to be won this is a wide choice indeed. Games to pick from include *Colossus Chess*. Once again all formats are covered here.

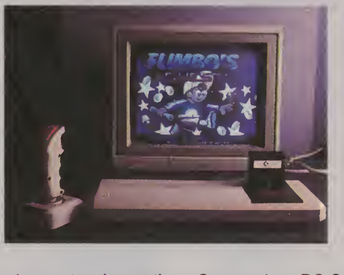
DEFENDER
LIGHTGUN

Cheetah

If there's one thing you need to play most of the games which are offered in this competition, it must be a joystick. Cheetah is prepared to offer some £500 worth of the things so you never need to touch a keyboard again while smashing your way through the alien ranks. Remember to tell us what machine you have.

Clares

Now here's an enticing set of prizes for the Archimedes user. Do you fancy winning *Interdictor*, the flight sim which really puts the RISC into the machine? No, well how about *Artisan 2* or even *Rhapsody*, two other pieces of software to cheer the neglected Archie up? Just answer the questions.



Commodore

You lucky people you! Just because you read *Express* you think that you should get the chance to win, gratis, a Commodore PC Starter Pack or even a couple of C64 consoles do you? Well, so do Commodore and ourselves. In fact Commodore suggested the idea to us, that's how much they think of you. There are games galore on the C64 – just have a look at our sister magazine *Commodore Format* if you want the proof. As for the PC, what better start could you get?

Computer Concepts

Have you got an Archimedes? Have you got a state of the art document processor for it? No? Well get your thinking head on, correctly answer the questions and you could win *Impressions*, the all singing, all dancing processor for your Arc. It comes with all the facilities you could want, and is being constantly reviewed to see how much more the package can get from the machine.

Domark

Dominic and Mark have been so busy, what with the show and all, that they don't seem to have any games left to give away. Instead Domark has gone for the sartorial approach; yes Spike Lee wears one, Magnum wears one, even Gorby has been seen in one – it's the baseball hat. To be exact there are 50 of them to be won.

Electronic Arts

Now here's a company which knows how to spell genrostity, gernonsisty, generoisty, generosity even already! "Badges, we got 'em, your readers can have 50 of 'em. Oh Tee-shirts, yes have 50 of those as well, and give them a chance to win a load of our games as well. Just get them to choose." That's what EA said, and you don't half have a lot to choose from. Check out *Populous*, *Powermonger*, *Chuck Yeager*, *Skate or Die*, *The Immortal* and *Projectile* among others.

Future Publishing

We at *Express* know that we are the finest organ out. However, we also know that there are some other magazines out there which are read by you people. So, Future Publishing (the big bosses) has been forced into providing three subscriptions for each of the following titles: *Amiga Format*, *ST Format*, *S*, *PC Plus*, *8000 Plus*, *Your Sinclair*, *Amstrad Action* and, of course, *New Computer Express*. That's free for a year, delivered to your door and no waiting at the newsagents.

J & M International

Cyber time is here. You might not be able to jack into the matrix yet (have a look around an interactive system old chum), but you can hit your mind with some waves. We have an MC2 superscript mind machine and six tapes to set your thoughts off into previously unknown tangents. J&M have also chucked in a box of Opus disks, as used by NASA. If you somehow fail to win, the company is also offering a special reduced price for *Express* readers. You can phone J&M (the UK's sole distributors) on 091-477 2555.

LocoScript

Locomotive Software

The company which launched a thousand hopeful authors with its *LocoScript* range has decided to allow one lucky reader to win a copy of *LocoScript PC*. If you are one of the lucky million who own a PCW you could also win one of two copies of the full range of Locomotive's products for the machines. The two packs comprise *LocoScript 2*, *LocoFile*, *LocoSpell*, and *LocoMail*. All you have to do is get the answers right and you could be set up for the foreseeable future.

Logitech

Logitech is known for its DTP hardware and software work. So, in a fit of outrageous philanthropy the com-

S, DISKS, HATS, JOYSTICKS, AND MUCH, MUCH MORE IN

BIRTHDAY COMPETITION

WIN!

pany has decided to donate the following zoomy products: *Finesse* (the all round super-smart-smashing program), a Handiscan scanner, *Imagin*, and a mouse. The lucky reader (yes the word was reader) who wins this little lot can certainly expect to be knocking out some serious desktop published work in the very near future.

Micronet

Now 100 of you will need a modem for this but what a prize it is. We have Micronet subscriptions to give away. Normally valued at £92 each, these subs will allow you to plug into one of the largest telecommunications networks this side of the Pecos. Think of what you can access: information, games, help lines, other parts of the world. All of this comes with Micronet, and British Telecom's expertise and help.

MirrorSoft

I am not going to say C********a! or d*de, or talk about flat pastry concoctions with anchovies and mozzarella but I think you get the picture.

There are turtle goodies to be won in some abundance. MirrorSoft in its infinite desire to free the sewers and fight the good fight has donated five bags of TMNTurtle goodies. These include bumbags, badges, T-shirts and general half-shell bits and pieces.

MPH

TCB Tracker should make your ST make sweet music. There is no accounting for talent, so MPH has not included Euterpe (she's the muse of music, and lyric poetry actually. There you've learnt something now). *TCB Tracker* allows you to take your fave samples from software such as *Replay* and then play them back using the ST keyboard. It uses four-channel sound and real or step-time sequencing. Ragamuffin stylee.

Page 1 Computers

Want to force your Amiga into doing what you want it to do? Would you like to create games? How about making your own applications? Then try the GFA BASIC interpreter from Page 1.

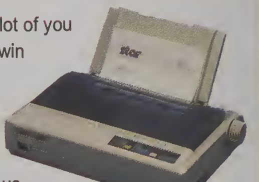
Sector 15

The public domain is the place to be. Just think, once upon a time, Steve Jobs and Wozniak used to be involved with PD and look what happened to them. So 50 memberships to the Sector 15 PD library looks even more like a good deal.

Software Business

If you were at CES you would have seen the Software Business stand stripped of posters and other paraphernalia by the hordes of young adults. Well SB is over the shell-shock and has donated nearly £400 worth of, you guess it, software to our readers. This includes various *Wicked* games, a *Music-X Junior*, copies of *Oops Up*, and the new shoot-'em-up *Zeriax*. So if you would like some new software, get the questions right and you'll do the business.

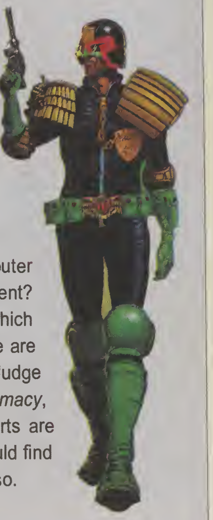
Star Micronics



Now, I just know that a lot of you out there will want to win this one; I do. Its a colour Star LC-10. Known to its friends as the LC-10C, the printer will print gorgeous hues out for you to pep up your DTP, letters or anything which needs hard copy. It's a 9-pin and will run with any standard parallel port. Caxton would be spitting tacks at the mere thought of it.

US Gold

It's big, it's popular and it's US Gold. So, it might be a huge mega-corporation but it can still find it in its heart to let our readers lay hands on some £1,250 worth of games, T-shirts and badges.



The games are up to you to choose, so have a look at the US Gold adverts you will find scattered around the various Future Publishing titles, take your pick and tell us what you would like.

Virgin

What is the best dressed computer person wearing at the moment? Why it must be the T-shirts which Virgin Games is offering. There are five sets to be won, including Judge Dredd, *Wonderland*, *Supremacy*, Well Ard, and16-Blitz. The shirts are hipper than something you would find connecting your leg to your torso.

The £20,000 Questions

All you have to do is read these questions, consult your friends, family, in fact anyone who might be able to help you to the prize of your choice, and dreams. Remember to fill in the card on the front of *Express* and send it, post haste, so that it reaches our glorious officers no later than October 19. Pick up your pens, no cheating, you have two weeks to complete the paper.

1) What does Amiga mean?
   - A) Computer
   - B) Girlfriend
   - C) Single celled life form

2) What does Amstrad stand for?
   - A) Alan Mark Sugar TRADing
   - B) Alot More Shops TRADing
   - C) Alan Michael Sugar TRADing

3) Who is not a Teenage Mutant Hero Turtle?
   - A) Leonardo
   - B) Raphael
   - C) Rembrandt

4) Which company makes joysticks?
   - A) Panther
   - B) Gorilla
   - C) Cheetah

5) Which popular music exponent was recently reported to use an Amiga?
   - A) Elvis Presley
   - B) Sid Vicious
   - C) Betty Boo

6) Which is the correct spelling?
   - A) LocoScript
   - B) LOCOscript
   - C) iocoSCript

7) Who wrote the cyber classic *Neuromancer?*
   - A) William Shakespeare
   - B) William Gibson
   - C) Mel Gibson

8) Which is not a recognised baud rate?
   - A) 9,600
   - B) 1,200
   - C) 12,000,000

9) What does PD stand for?
   - A) Public Domain
   - B) Public Dominion
   - C) Private Dancer

10) Which character would you expect to find in Virgin games' *Wonderland?*
   - A) The Mad Hatter
   - B) B
   - C) Dean Moriarty

11) MicroProse brought out a flight sim, was it
   - A) F231
   - B) Baron Von Richtofen's Flighty Challenge
   - C) F15

12) *Out run*, the classic driving game came from
   - A) Ilford High Road
   - B) US GOLD
   - C) Brentwood

13) The Acorn Archimedes makes use of what technology?
   - A) iron age
   - B) RISC-based
   - C) Debased

14) Which of these is a programming language?
   - A) BASIC
   - B) LinGo
   - C) Lisps

15) Which company makes footy sims?
   - A) Anchor
   - B) Anco
   - C) Anne Diamond

16) In *The Godfather*, what was found in a bed?
   - A) A bedbug
   - B) A secondary school head
   - C) A horse's head

17) Who is the advertisement manager on *Express* (a clue, see page 10)?
   - A) Meryl Streep
   - B) Helen Kirkhope
   - C) Dame Vera Lynn

18) Which film featured a computer prominently?
   - A) *Lassie Come Home*
   - B) *TRON*
   - C) *The Greatest Story Ever Told*

19) How many beans make five?
   - A) Bean, bean, half-bean, bean, bean, half
   - B) Bean, half-bean, bean, bean, half-bean, bean
   - C) Bean, bean, bean, bean, bean, bean, bean

20) Who was the first person on the moon?
   - A) Louis Armstrong
   - B) Neil Louis
   - C) Neil Armstrong

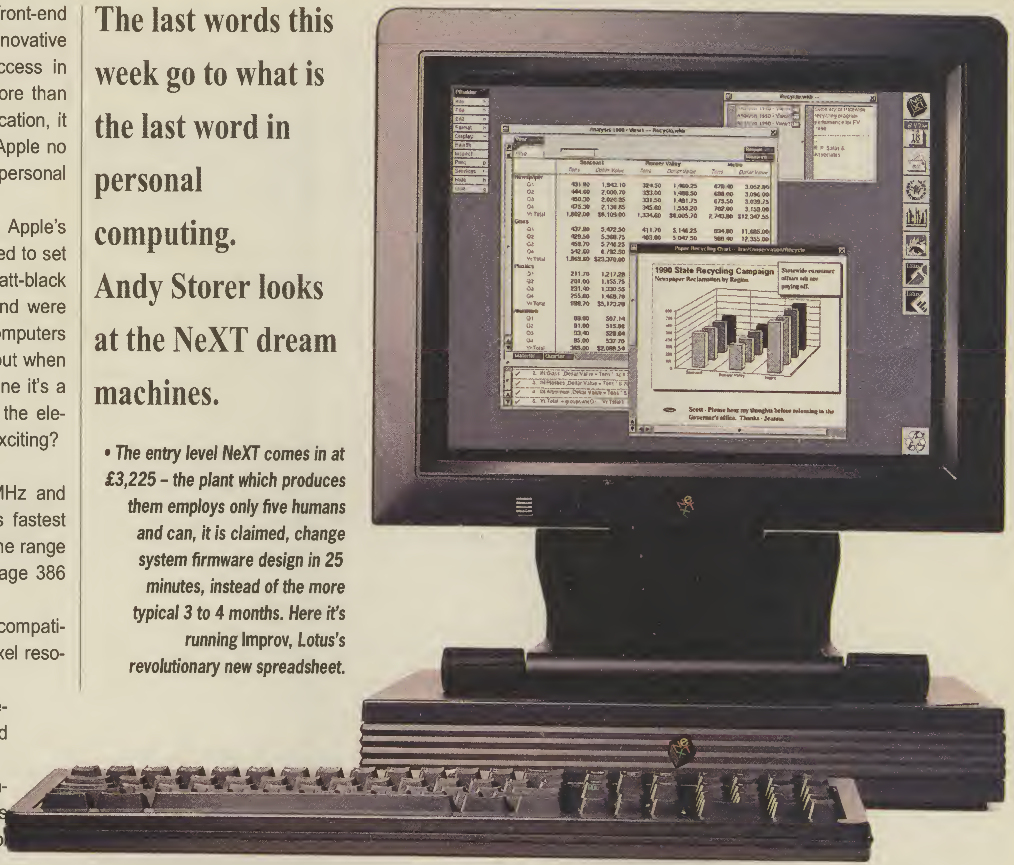
WHAT'S NeXT?

The last words this week go to what is the last word in personal computing. Andy Storer looks at the NeXT dream machines.

The Apple Mac range had the friendliest front-end since Jayne Mansfield, until now. Its innovative interface underpinned its unrivalled success in the DTP and multimedia markets far more than the hardware it rested on. Whatever the application, it may have always been easier on a Mac; but Apple no longer produces the world's leading edge personal computers. The next generation has arrived.

Some would put it all down to Steve Jobs, Apple's co-founder and all-round whizz-kid who departed to set up NeXT in 1985. Three years later, the matt-black beauties rolled off a robotic production line and were marketed as the world's first 'interpersonal' computers – 'partners in thought'. A brave claim maybe, but when one takes a closer look at this futuristic machine it's a pitch that has some substance. So, what are the elements of the new NeXT range that make it so exciting? Well, try these for starters :

- Motorola 68040 processors running at 25MHz and delivering 15 MIPS – that's faster than Sun's fastest RISC workstation, twice the speed of a top of the range Mac IIfx and five times the speed of the average 386 PC clone.
- 8Mb of RAM, 105Mb hard disk, an MS-DOS compatible 2.88Mb floppy drive and an 1,120 x 830 pixel resolution monitor fitted as standard.
- Built-in CD quality sound processor and integrated handling of text, voice, graphics and video.
- Display PostScript – the page description language pioneered by Adobe for printing devices has for the first time been extended to control screen images, so that what you see really is what you get from your laser.
- The latest Unix operating system offering full multitasking, running under a graphic interface that's been adopted by IBM for use in its future Unix machines.



• The entry level NeXT comes in at £3,225 – the plant which produces them employs only five humans and can, it is claimed, change system firmware design in 25 minutes, instead of the more typical 3 to 4 months. Here it's running Improv, *Lotus's revolutionary new spreadsheet.*

NeXT POWER

Now this isn't some marketing exercise, but one can't fail to be impressed – there's speed, there's power, there's even colour – 32-bit colour! 24-bits for generating over 16 million colours on a display of 1 million pixels, and 8-bits for providing transparency effects. Sure, you can buy 24-bit colour cards for a Mac, but the NeXTdimension board has two built-in chips that leave it out on its own.

First, an Intel i860 RISC chip is included just to handle on-screen colour. So when you pick up a high-res colour image on screen and drag it across the display, the redraw is instantaneous.

Second, there's a C-Cube compression chip that can squeeze a 1Mb image down to 40K with no discernable difference in appearance. So storage or transfer of heavy duty video or bit-mapped images compressed in real time can be filed or shunted over a network very quickly. Video drivers allow you to run tape, TV, Laserdiscs, CDVs or whatever in their own windows as full-motion video which you can capture and paste directly into DTP documents.

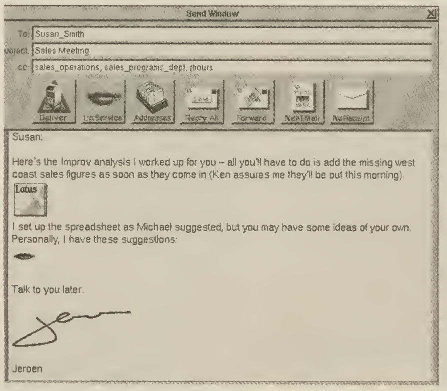
What's more, there are 400 dots per inch laser printers for £2,000, optional 250Mb eraseable optical disks and 1.4 gigabyte hard disks.

If this leaves you stunned, you probably won't flinch at the addressable RAM you can have on board – 64 megabytes!

NeXT APPLICATIONS

While well-known applications like Adobe *Illustrator*, Quark *Xpress*, *WordPerfect* and *Wingz* are all available for the NeXT range, two new programs in particular stand out as living up to the hardware's spec.

Imagine's *MediaStation* is a multimedia database in which text can be stored in fields and images, and sounds and animations stored in associated buttons. Ideally configured for use over a network, *MediaStation* permits high resolution scanned images to be combined with CD-quality sound and voice annotations for desktop presentations and animations. Materials can also be linked via 'hyperlinking' functions so that browsing interactive databases can be quickly built. Both image and text files can be imported, manipulated and outputted to videotape if required.



To: Susan_Smith
ubject: Sales Meeting
cc: sales_operations, sales_programs_dept, jbours

Susan:

Here's the Improv analysis I worked up for you – all you'll have to do is add the missing west coast sales figures as soon as they come in (Ken assures me they'll be out this morning).

I set up the spreadsheet as Michael suggested, but you may have some ideas of your own. Personally, I have these suggestions:

Talk to you later.

Jeroen

• Clicking on the lips will play the voice clip that's been appended to this e-mail document. Clicking on the Lotus button will load the attached Improv *spreadsheet.*

Perhaps the program to arouse most interest though is the new spreadsheet from Lotus – *Improv.* This is radical in so far as it uses common English commands to enter and link numerical data. Lotus claims to have reinvented the spreadsheet with the *1-2-3* compatible *Improv* and indeed, in the way that formulae and functions automatically update and copy themselves when the spreadsheet is extended, this could well be true. But it's the presentational aspects of *Improv* which really set it above other spreadsheets. It's possible to view data with 27 different graphical formats and rotate the results any which-way you want.

LET'S GET INTERPERSONAL

Central to NeXT's vision of computing in the Nineties is the notion of interpersonal computing. It argues that the previous revolutions in computing – spreadsheets and desktop publishing – were created with a single desk in mind. Now, the argument holds, we are stepping towards working together on collaborative projects. As such, machine's have to be built around networking – and high-speed, transparent networking at that. Ethernet is the chosen channel of communications and through it, all NeXT machines can share applications and transfer electronic mail. On the software side we're not just talking viewdata – we're looking at scanned images, graphics, fully formatted DTP documents, video, fax and, since each monitor has a microphone built-in, speech.With built in OCR software, the NeXT mail system can receive faxes read the images directly as text for subsequent editing. ■

Express *will be taking delivery of a NeXT at the end of the year so watch out for a full hands-on feature then.*

RETURN THE COUPON FOR FREE COLOUR BROCHURES!

RETURN THE COUPON FOR FREE COLOUR BROCHURES!

NEW! - AMIGA PACK

Commodore A500 Flight Of Fantasy

£399 INC VAT

Commodore
AMIGA 500
Flight of Fantasy
RETALIATOR
DELUXE Paint II
ESCAPE ROBOT MONSTERS
TENGEN
RAINBOW ISLANDS
ocean

A500 BATMAN PACK

Commodore AMIGA 500
BATMAN PACK
ocean
Paint II
INTERCEPTOR
ELECTRONIC ARTS

The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

PACK INCLUDES:

A500 Computer & Mouse	£399.99
A520 TV Modulator	£24.99
Batman The Movie	£24.95
New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95
TOTAL RRP:	£549.78
Less Pack Saving:	£150.78
PACK PRICE:	**£399.00**

£399 INC VAT

AMIGA 2000

For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

£1295 +VAT= £1489.25

FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

DELUXE PAINT II:

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

ESCAPE / ROBOT MONSTERS:

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

RAINBOW ISLANDS:

Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

F29 RETALIATOR:

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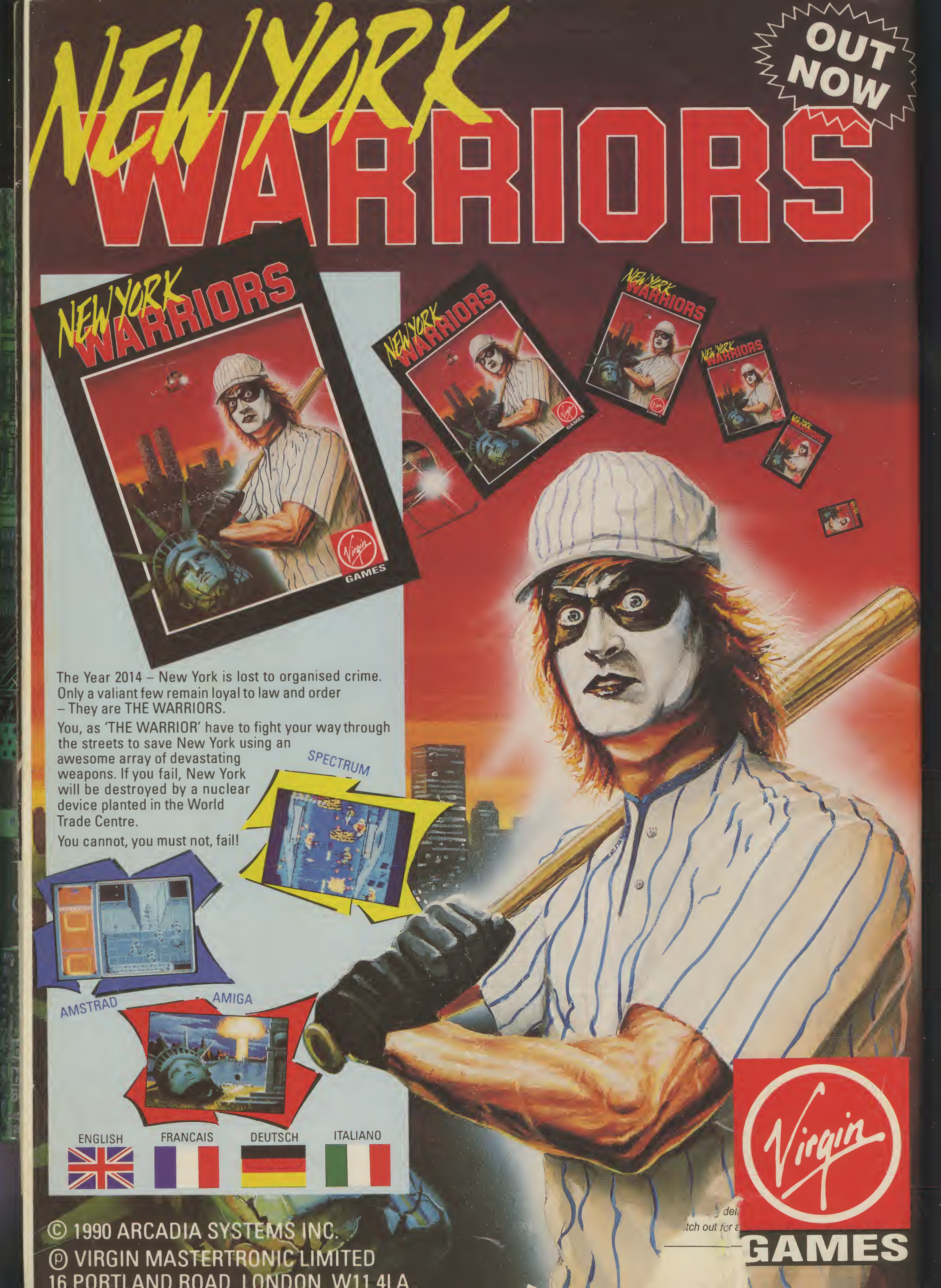
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